

PORTFOLIO OF COMPOSITIONS: *TO UNDO THIS KNOT OF THE NIGHT,*
I HEAR THE SOUND OF TREES

Part I

A Dissertation

Presented to the Faculty of the Graduate School
of Cornell University

In Partial Fulfillment of the Requirements for the Degree of
Doctor of Musical Arts

by

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TABLE OF CONTENTS

COMPOSITION ONE: <i>TO UNDO THIS KNOT OF NIGHT</i>	1
Instrumentation	2
Score	3
 COMPOSITION TWO: <i>I HEAR THE SOUND OF TREES</i>	
Instrumentation	61
Text	62
Score	
I. After the dazzle of day	65
II. Reflective	75
III. Cascadilla Falls	79
IV. Perfection	93
V. Love Song	98

COMPOSITION ONE

TO UNDO THIS KNOT OF THE NIGHT

For Solo Violin and Ten Players

(2008)

INSTRUMENTATION

1 Flute/Piccolo
1 Clarinet/Bass Clarinet

1 Horn in F
1 Trumpet

Piano

Percussion (1 Player)

Suspended Cymbal
Marimba
Vibraphone
Bass Drum
1 Timpani
2 Crotales (C5, D5)
Triangle

Violin
Viola
Violoncello
Contrabass

Duration: 11'30"

Commissioned by the Tanglewood Music Center

Kay Rhie

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6

Flute

Fl./Picc.

B. Cl.

Hn.

C Tpt.

Perc.

Pno.

S. Vln.

Vln.

Vla.

Vc.

Cb.

ppp < *p*

p

Pick up Bass Clarinet

ppp < *p*

p

sub p

non vibr.

poco

poco

molto vibr.

non vibr.

ord. vibr. espr.

sfz

mf

sub p

mf

3

pp

non vibr.

pizz.

arco

sfz

ppp

non vibr.

sul tasto

poco

molto vibr.

non vibr.

sub pp

ppp

pp

ppp

ord.

non vibr.

poco

molto vibr.

sul pont.

ord.

sub pp

ppp

3

ppp

ppp < >

A

Fl./Picc. *II*
p < >

B. Cl.
niente < *p* >

Hn.

C Tpt.
niente < *p* >

Perc.

Pno.

S. Vln.
7 sul pont *ord.* *3*
p *sfp* *f* *3*

Vln.
con sord. *sempre legato* *senza sord.*
ppp *3* *p* *5*

Vla.
sul pont *ord.* *pp* < *3* *p* > *pp* *niente* < *p* >

Vc.

Cb.
3 *suoni reali*

14 piccolo Pick up Flute

Fl./Picc. niente $\langle p \rangle$

B. Cl.

Hn.

C Tpt. con sord. $ppp \langle p \rangle$

Perc.

Pno.

S. Vln. poco p ord.

Vln. pp

Vla. pp

Vc. pp pizz. l.v. mp

Cb.

with mellower tone non vib

21

B

Fl./Picc. *ppp* *p*

B. Cl. *ppp* *p* 3 3

Hn. *ppp*

C Tpt.

Perc.

Pno.

B *ord. vibr. espr.* 3 *mp*

S. Vln. *mp*

Vln. *arco* *p* 3

Vla. *pp* *p* 3 3 5

Vc. *p* 3 *mp*

Cb.

23

Fl./Picc.

B. Cl.

Hn.

C Tpt.

Perc.

Pno.

S. Vln.

Vln.

Vla.

Vc.

Cb.

senza sord

niente $\leftarrow p$

ppp 5 p pp 3 5 mp

pp

ppp 5 p pp 3 5 mp

pp

mf

sul tasto

p

senza sord.

sul tasto

p

suoni reali

26

Fl./Picc.

B. Cl.

Hn.

C Tpt.

Perc.

Pno.

S. Vln.

Vln.

Vla.

Vc.

Cb.

p

pp

mp

sub p

p

mf

ffp

mf

p

mf

mp

sub p

sul tasto

* All harmonics sound as written, not 8vba.

C

30

Fl./Picc. *pp* *p* *<* *>*

B. Cl. *p*

Hn.

C Tpt. *p*

Perc. **Crotale** bowed *niente* *p*

Pno.

C

S. Vln. *mf* *sfp* *f*

Vln. *p* *gliss.* *mp* *mf* *mp*

Vla. *mp* *mf* *mp*

Vc. *mf* *mp*

Cb.

34

Fl./Picc. *ppp* *p*

B. Cl. *pp* *mp*

Hn. *p*

C Tpt. *p*

Perc. Marimba

Pno.

S. Vln. *p* *mp*

Vln. *mp*

Vla. *mp*

Vc. *mf*

Cb. *mf*

D ♩=100 ♩=50

36

Fl./Picc. *fff*

B. Cl. *fff*

Hn. *f*

C Tpt. *f*

Perc. *fff*

Pno. *fff*

Ped.

D ♩=100 ♩=50

S. Vln. *fff* *pp*

Vln. *fff* *ppp* *gliss.*

Vla. *fff* *pp*

Vc. *fff ppp* *gliss.*

Cb. *fff* *pizz* *l.v.* *(slow, gradual gliss w/ cello)*

41

Fl./Picc.

B. Cl.

Hn.

C Tpt.

Perc.

Pno.

S. Vln.

Vln.

Vla.

Vc.

Cb.

subppp

mp

mf

p

pp

pp

pp

arco

pp

15

49

Fl./Picc. *ff* *pp* *mp* *p*

B. Cl. *f*

Hn. *pp* *p*

C Tpt.

Perc.

Pno.

S. Vln. *5*

Vln. *pp*

Vla. *pp* *subpp*

Vc.

Cb.

52 Pick up Piccolo

Fl./Picc.

B. Cl.

Hn.

C Tpt.

Perc.

Pno.

S. Vln.

Vln.

Vla.

Vc.

Cb.

[illegible]

F ♩=76

62 Piccolo Pick up Flute

Fl./Picc. *fff* *fff*

B. Cl. Pick up clarinet

Hn.

C Tpt. *fff*

Perc. **Bass Drum** (Soft Sticks) *pppp* *pp*

Pno. *fff*

F ♩=76

S. Vln. sul pont. *fff* *ord.* *ff* *sff* *tr*

Vln. sul pont. *fff*

Vla. sul pont. *fff*

Vc. sul pont. *fff*

Cb. pizz *fff*

68

Fl./Picc.

B. Cl.

Hn.

C Tpt.

Perc.

Pno.

S. Vln.

Vln.

Vla.

Vc.

Cb.

p *f*

tr

p *f*

pp <

tr

ord.

ppp *f* *p*

ord.

p *f*

ord.

ppp *f* *p*

arco

pp <

71

Fl./Picc.

B. Cl. Clarinet

Hn.

C Tpt.

Perc. Vibe

Pno.

S. Vln. *(tr)* *gliss.* *ff* *p* *ffp* *f*

Vln. *p* *f* *p*

Vla. *p* *f* *p*

Vc. *f* *pp*

Cb. *mp* *mp* *p*

73 **G**

Fl./Picc. *ff*

B. Cl. *ff* *p* *tr*

Hn. *ff*

C Tpt. *ff*

Perc. *ff*

Pno. *ff*

S. Vln. **G** *(tr)* *ff* *tr* *ff* *fp* *tr*

Vln. *ord.* *f* *p* *non cresc.* *mp*

Vla. *f* *p* *non cresc.* *mp*

Vc. *f* *p* *non cresc.* *mp* *tr* *f*

Cb. *f* *mp*

80

Fl./Picc. *p* < > *p* *mp* *p* < > *p* *mf*

B. Cl. *f* *f* *mf*

Hn. *p* *f* *p* *f*

C Tpt. *p* *mf* *sfp* *mf*

Perc. *p* *mp* *p* *mf*

Pno. *f* *p* *f*

S. Vln. *f* *fp* *ff* *ff* *ff* *fp*

Vln. *p* *f* *ord.* *p* *mf*

Vla. *p* *f* *ord.* *p* *f* *pp*

Vc. *pp* *f* *ord.* *p* *f*

Cb. *p* *mf* (suoni reali)

sul tasto *sul pont.* *ord.*

85

H

Fl./Picc. *ff* *p*

B. Cl. *p* *mf* *ff* *p*

Hn. *ff* *pp*

C Tpt. *ff*

Perc. **Sus. Cymb.** *f*

Pno. *ff* *Red.*

H

S. Vln. *fp* *tr* *gliss.* *tr* *gliss.* *tr*

Vln. *ff* *pp* <

Vla. *p* *f* *ff* *p*

Vc. *pp* *f* *pp* <

Cb. *ff*

26

95

Fl./Picc. *f* *mp* *ppp* *mf*

B. Cl. *f* *ppp*

Hn.

C Tpt. *f*

Perc. *p*

Pno.

S. Vln. *tr* *ff* *p* *f* *tr* *f*

Vln.

Vla. *p* *f* sul pont.

Vc. *p* *f* sul pont.

Cb. *p* *f* sul pont.

100

I

Fl./Picc.

B. Cl.

Hn.

C Tpt.

Perc.

Pno.

S. Vln.

Vln.

Vla.

Vc.

Cb.

p

f

pp

ord.

ord.

102

Fl./Picc.

B. Cl.

Hn.

C Tpt.

Perc.

Pno.

S. Vln.

Vln.

Vla.

Vc.

Cb.

3

6

30

107

Fl./Picc.

B. Cl.

Hn.

C Tpt.

Perc.

Pno.

S. Vln.

Vln.

Vla.

Vc.

Cb.

108

Piu mosso

109

Fl./Picc.

B. Cl.

Hn.

C Tpt.

Perc.

Pno.

S. Vln. ^(tr)

Vln. *soft but with nervous energy*
sub p

Vla. *soft but with nervous energy*
sub p

Vc. *soft but with nervous energy*
sub p

Cb.

The musical score for measures 109 and 110 is as follows:

- Fl./Picc.:** Rest in both measures.
- B. Cl.:** Rest in both measures.
- Hn.:** Measure 109: Quarter rest, eighth rest, quarter note. Measure 110: Rest.
- C Tpt.:** Rest in both measures.
- Perc.:** Rest in both measures.
- Pno.:** Rest in both measures.
- S. Vln.:** Measure 109: Quarter note with trill, eighth rest, quarter note. Measure 110: Rest.
- Vln.:** Measure 109: *soft but with nervous energy*, *sub p*. Dense sixteenth-note passage. Measure 110: Continuation of the passage.
- Vla.:** Measure 109: *soft but with nervous energy*, *sub p*. Dense sixteenth-note passage. Measure 110: Continuation of the passage.
- Vc.:** Measure 109: *soft but with nervous energy*, *sub p*. Dense sixteenth-note passage. Measure 110: Continuation of the passage.
- Cb.:** Measure 109: Long note with a fermata. Measure 110: Continuation of the note.

III

Fl./Picc.

B. Cl.

Hn.

C Tpt.

Perc. **Marimba**

Pno.

S. Vln.

Vln.

Vla.

Vc.

Cb.

33

J $\text{♩} = 100$

112

Fl./Picc. *fff*

B. Cl. *fff*

Hn.

C Tpt. *fff*

Perc. *fff*

Pno. *fff*

J $\text{♩} = 100$

S. Vln. *fff*

Vln. *fff*

Vla. *fff*

Vc. *fff ppp*

Cb. *fff*

l.v.

114

Fl./Picc.

B. Cl.

Hn.

C Tpt.

Perc.

Pno.

S. Vln.

Vln.

Vla.

Vc.

Cb.

Detailed description: This page of a musical score covers measures 114 and 115. The key signature has one flat (B-flat), and the time signature is 3/4. The score includes parts for Flute/Piccolo, Bass Clarinet, Horn, C Trumpet, Percussion, Piano (Grand Staff), Violin I, Violin II, Viola, Violoncello, and Contrabass. Measures 114 and 115 are marked with measure numbers at the beginning of the staff. Fingerings (5 and 6) and slurs are indicated for many of the notes. The woodwinds and strings play a rhythmic pattern of eighth and sixteenth notes, while the piano provides harmonic support with chords and single notes.

rit.

115 $\text{♩} = 100$

Fl./Picc. *fff* *fp*

B. Cl. *fff* *fp*

Hn. *fp* *fp*

C Tpt. *fff* *fp* *fp*

Perc. *fff*

Pno. *fff*

S. Vln. *fff* rit.

Vln. *fff* 7

Vla. *fff* 7

Vc. *fff ppp* *fff* 7

Cb. *fff* l.v. (pizz.) *fff* 7

117 $\text{♩} = 76$

Fl./Picc. *f* 3 7

B. Cl. *f* 6 6

Hn. *mf*

C Tpt. *mf* 3 5 6 6

Perc. *sfz* *sfz* 3 6 6

Pno. *ff* 3 7 6 6

S. Vln. *f* 6 6

Vln. *f* 3 6 6

Vla. *f* 3 5 6 6

Vc. *f* 3 5

Cb. *ff* 5

Ped.

K

122

Fl./Picc.

B. Cl.

Hn.

C Tpt.

Perc.

Marimba

Pno.

S. Vln.

Vln.

Vla.

Vc.

Cb.

Jet whistle

mp

ord.

gliss.

gliss.

molto rit..

128

Fl./Picc.

B. Cl.

Hn.

C Tpt.

Perc.

Pno.

S. Vln.

Vln.

Vla.

Vc.

Cb.

p

ppp

pp

p

mf

pp

p

pp

p

pp

p

mf

pp

mp

non vib

gliss.

non vib

gliss.

non vib

non vib

non vib

non vib

molto rit..

L a tempo ♩=76

133

Fl./Picc. *sf* *ff* 3 3

B. Cl.

Hn. breath *mp* 3

C Tpt. breath *mp* 3

Perc. *mf* 3

Pno. *sf* *f* 3 7 3 3
Hit low register with left palm
Ped. Ped. Ped.

L a tempo ♩=76

S. Vln.

Vln. pizz *ff* 3 arco *f* 7

Vla. pizz *f* 3

Vc.

Cb. *f* 3 gliss.

136

Fl./Picc. *mp* *pp* *p*

B. Cl. *mp* *pp* *p*

Hn. *mp*

C Tpt.

Perc. *ff* *pp*

Pno. *ff* *

S. Vln. *f* *ff*

Vln. *ff* *ff* *p*

Vla. arco *ff*

Vc. pizz *sfz* arco *mf* *sfp* *gliss.*

Cb. pizz *sfz* arco (suoni reali) *p*

M

140

Fl./Picc.

B. Cl.

Hn.

C Tpt.

Perc.

Pno.

(Celeste, if available)

ppp

pp

mf

M

S. Vln.

Vln.

Vla.

Vc.

Cb.

mp

mf

non vib

ord

p

f

pp

45

150

Fl./Picc.

B. Cl.

Hn.

C Tpt.

Perc.

Pno.

S. Vln.

Vln.

Vla.

Vc.

Cb.

p

mp

sul tasto

sul tasto

47

161

Fl./Picc.

B. Cl.

Hn.

C Tpt.

Perc.

Pno.

S. Vln.

Vln.

Vla.

Vc.

Cb.

164

Fl./Picc.

B. Cl.

Hn.

C Tpt.

Perc.

Pno.

S. Vln.

Vln.

Vla.

Vc.

Cb.

The musical score for measures 164-166 is as follows:

- Fl./Picc.:** Rests in measures 164 and 165; 7/8 time signature in measure 166; rests in measure 166.
- B. Cl.:** Rests in measures 164 and 165; 7/8 time signature in measure 166; rests in measure 166.
- Hn.:** Rests in measures 164 and 165; 7/8 time signature in measure 166; rests in measure 166.
- C Tpt.:** Rests in measures 164 and 165; 7/8 time signature in measure 166; rests in measure 166.
- Perc.:** Complex rhythmic pattern in measures 164 and 165, including triplets and a final measure with a double bar line and a repeat sign.
- Pno.:** Rests in measures 164 and 165; 7/8 time signature in measure 166; rests in measure 166.
- S. Vln.:** Active melodic line in measures 164 and 165, featuring triplets and a final measure with a double bar line and a repeat sign.
- Vln.:** Active melodic line in measures 164 and 165, featuring triplets and a final measure with a double bar line and a repeat sign.
- Vla.:** Active melodic line in measures 164 and 165, featuring triplets and a final measure with a double bar line and a repeat sign.
- Vc.:** Active melodic line in measures 164 and 165, featuring triplets and a final measure with a double bar line and a repeat sign.
- Cb.:** Rests in measures 164 and 165; 7/8 time signature in measure 166; rests in measure 166.

167

Fl./Picc.

B. Cl.

Hn.

C Tpt.

Perc.

Pno.

S. Vln.

Vln.

Vla.

Vc.

Cb.

The musical score for measures 167-170 is as follows:

- Measures 167-168 (4/4 time):**
 - Fl./Picc., B. Cl., Hn., C Tpt., Perc., and Pno. are silent.
 - S. Vln. plays a melodic line with a triplet of eighth notes and a septuplet of sixteenth notes.
 - Vln. plays a melodic line with a triplet of eighth notes.
 - Vla. plays a melodic line with a triplet of eighth notes.
 - Vc. plays a melodic line with a triplet of eighth notes.
 - Cb. is silent.
- Measures 169-170 (3/4 time):**
 - Fl./Picc., B. Cl., Hn., C Tpt., Perc., and Pno. are silent.
 - S. Vln. plays a melodic line with a triplet of eighth notes and a quintuplet of sixteenth notes.
 - Vln. plays a melodic line with a triplet of eighth notes.
 - Vla. plays a melodic line with a triplet of eighth notes.
 - Vc. plays a melodic line with a triplet of eighth notes.
 - Cb. is silent.

171

Fl./Picc.

B. Cl.

Hn.

C Tpt.

Perc.

Pno.

S. Vln.

Vln.

Vla.

Vc.

Cb.

5 6 7

7

N

[illegible]

179

Fl./Picc. *sub pp*

B. Cl.

Hn.

C Tpt.

Perc.

Pno.

S. Vln. *mp*

Vln. *subp* *pp*

Vla. *subp* *pp*

Vc. *subp* *pp*

Cb.

Detailed description of the musical score: The score is for measures 179, 180, and 181. The key signature has one sharp (F#) and the time signature is 3/4.
 - Measure 179: Fl./Picc. and B. Cl. enter with a half note chord (F#4, C#5) marked *sub pp*. Hn., C Tpt., Perc., and Pno. are silent. S. Vln. has a melodic line starting on G4. Vln., Vla., and Vc. have a half note chord (F#4, C#5) marked *subp*. Cb. is silent.
 - Measure 180: Fl./Picc. and B. Cl. continue with the same chord. S. Vln. continues its melodic line. Vln., Vla., and Vc. continue with the same chord. Cb. remains silent.
 - Measure 181: Fl./Picc. and B. Cl. continue. S. Vln. has a melodic line marked *p*. Vln., Vla., and Vc. have a half note chord marked *pp*. Cb. remains silent.

182

Fl./Picc.

B. Cl.

Hn.

C Tpt.

Perc.

Pno.

S. Vln.

Vln.

Vla.

Vc.

Cb.

As at first

p

The musical score for measures 182 and 183 is as follows:

- Fl./Picc.:** Rest in both measures.
- B. Cl.:** Rest in both measures.
- Hn.:** Rest in both measures.
- C Tpt.:** Rest in both measures.
- Perc.:** Rest in both measures.
- Pno.:** Rest in both measures.
- S. Vln.:**
 - Measure 182: Quarter note G#4, eighth note A#4, quarter note B4, eighth note A#4, quarter note G#4, eighth note F#4, quarter rest.
 - Measure 183: Quarter note G#4, eighth note A#4, quarter note B4, eighth note A#4, quarter note G#4, eighth note F#4, quarter note E4. Dynamic *p*. Instruction "As at first".
- Vln.:**
 - Measure 182: Quarter note G4, eighth note A4, quarter note B4, eighth note A4, quarter note G4, eighth note F4, quarter note E4. Triplet marking "3" over the first three notes.
 - Measure 183: Quarter note D5, eighth note C#5, quarter note B4, eighth note A4, quarter note G4, eighth note F4, quarter note E4.
- Vla.:**
 - Measure 182: Quarter note G4, eighth note A4, quarter note B4, eighth note A4, quarter note G4, eighth note F4, quarter note E4. Triplet marking "3" over the first three notes.
 - Measure 183: Quarter note D5, eighth note C#5, quarter note B4, eighth note A4, quarter note G4, eighth note F4, quarter note E4. Triplet marking "3" over the first three notes.
- Vc.:**
 - Measure 182: Quarter note G4, eighth note A4, quarter note B4, eighth note A4, quarter note G4, eighth note F4, quarter note E4.
 - Measure 183: Quarter note D5, eighth note C#5, quarter note B4, eighth note A4, quarter note G4, eighth note F4, quarter note E4.
- Cb.:** Rest in both measures.

184 **O** $\text{♩}=50$ **Calmo**

Fl./Picc.

B. Cl.

Hn.

C Tpt.

Perc.

Pno.

O $\text{♩}=50$

S. Vln.

Vln.

Vla.

Vc.

Cb.

186

Fl./Picc.

B. Cl.

Hn.

C Tpt.

Perc.

Pno.

S. Vln.

Vln.

Vla.

Vc.

Cb.

non vib

p

p

3

5 3 3 5

188

Fl./Picc.

B. Cl.

Hn.

C Tpt.

Perc.

Pno.

S. Vln.

Vln.

Vla.

Vc.

Cb.

The musical score for measures 188-191 is as follows:

- Fl./Picc.:** Measure 188 has a whole rest. Measures 189-191 are empty.
- B. Cl.:** Measure 188 has a whole rest. Measures 189-191 are empty.
- Hn.:** Measure 188 has a whole rest. Measures 189-191 are empty.
- C Tpt.:** Measure 188 has a whole rest. Measures 189-191 are empty.
- Perc.:** Measure 188 has a whole rest. Measures 189-191 are empty.
- Pno.:** Measure 188 has a whole rest. Measures 189-191 are empty.
- S. Vln.:** Measure 188 has a half note G4. Measure 189 has a quarter rest. Measure 190 has a triplet of eighth notes (A4, B4, C5) beamed together, with a slur above. Measure 191 has a triplet of eighth notes (D5, E5, F#5) beamed together, with a slur above.
- Vln.:** Measure 188 has a half note G4. Measure 189 has a quarter note A4. Measure 190 has a quarter note B4. Measure 191 has a quarter note C5.
- Vla.:** Measure 188 has a whole rest. Measures 189-191 are empty.
- Vc.:** Measure 188 has a half note G2. Measure 189 has a quarter note A2. Measure 190 has a quarter note B2. Measure 191 has a quarter note C3.
- Cb.:** Measure 188 has a whole rest. Measures 189-191 are empty.

189

Fl./Picc.

B. Cl.

Hn.

C Tpt.

Perc.

Pno.

S. Vln.

Vln.

Vla.

Vc.

Cb.

Bowed Crotale

pp

ppp

ppp

ppp

COMPOSITION TWO

I HEAR THE SOUND OF TREES

For Soprano, Flute (Piccolo), Clarinet (Bass Clarinet), Piano, Violin, Cello

(2006)

I Hear the Sound of Trees

TEXT

1. After the dazzle of day is gone,
Only the dark, dark night shows to my eyes the stars;
After the clangor of organ majestic, or chorus, or perfect band,
Silent, athwart my soul, moves the symphony true

Walt Whitman

2. Reflective

I found a
weed
that had a

mirror in it
and that
mirror

looked in at
a mirror
in

me that
had a
weed in it

A. R. Ammons

3. Cascadilla Falls

I went down by Cascadilla
Falls this
evening, the
stream below the falls,
and picked up a
handsized stone
kidney-shaped, testicular and

thought all its motions into it,

the 800 mph earth spin,
the 190-million-mile yearly
displacement around the sun,
the overriding
grand
haul

of the galaxy w/ the 30,000
mph of where
the sun's going:
thought all the interweaving
motions
into myself: dropped

the stone to dead rest:
the stream from other motions
broke
rushing over it:
shelterless,
I turned

to the sky and stood still:
oh
I do
not know where i am going
that I can live my life
by the single creek.

A.R. Ammons

4. Perfection

Only themselves understand themselves, and
The like of themselves,
As Souls only understand Soul.

Walt Whitman

5. Love Song

Rings of birch bark
stand in the woods
still circling the nearly
vanished log: after
we go to pass

through log and star
the white song will
hug us together in the
woods of some lover's head

~A. R. Ammons

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1. After the Dazzle of Day

Kay Rhie

♩ = 80 *bright, lively*

Flute

Clarinet

Violin

Violoncello

Voice

Piano

mp *f* *mf* *mf* *f*

mp *f* *mf* *mf* *f*

arco *mp* *f* *mf* *f* *mf*

pizz *f* *mf* *f* *mf* *f*

bright, lively

♩ = 80

mp *mf* *f* *mf* *f*

sf

5

mf *mp* *mf* *mp*

pizz arco pizz. arco

mf *f*

Af - ter the daz - zle of day is gone

mp

freely

8

a tempo

mp *> p*

a tempo

p

f

pizz

a tempo *arco* *pizz* *arco*

p *f*

a tempo *arco* *pizz*

p *f*

freely
poco
ff

Af - ter the daz - - zle of day_____ is gone_____

a tempo

p *f*

12

mf *mp* *mp* *pp* *pizz* *arco* *pizz* *arco* *mp* *p* *pp*

molto rit.

molto rit.

Ped. * *Ped.* * *Ped.* *

$\text{♩} = 60$

17

p *ppp* *p*

arco
con sord n.v.

con sord n.v.

p *ppp* *p*

p *ppp* *p*

on - - ly the dark

$\text{♩} = 60$

p *pp*

Red

[illegible]

[illegible]

30

f *p* *f* *f*

arco pizz arco pizz.

mf *f* *ff*

af - ter_ the clang-or of or - gan_ ma jes - tic_ or cho-rus

mf

34

$\text{♩} = 60$

mp *mf* *mp* *psf*

arco *pizz.* *arco*

mp *mf* *fp* *f* *p* *calmer and warm* *pp*

per - fect band si - lent a - thwart my

$\text{♩} = 60$

mp *p*

39

ppp *p* *ppp* *pp* *pppp* *pppp*

pizz *mp* *p* *mp* *pp*

soul moves the symphonic true

8^{va} 8^{va}

2. Reflective

♩ = 104 whimsical

75

The musical score for "2. Reflective" is written for a chamber ensemble and voice. It begins with a tempo of 104 beats per minute, marked as whimsical. The score is divided into two systems. The first system includes staves for Piccolo (Picc.), Bass Clarinet (B. Cl.), Violin (Vln), Viola (VC), Voice, and Piano (Pno.). The Piccolo, Violin, and Piano parts feature a melodic line that starts in 2/4 time, moves to 3/4, and then returns to 2/4. The Bass Clarinet and Viola parts provide harmonic support, with the Viola also playing pizzicato. The Voice part has a vocal line that begins in the second system. The Piano part includes a bass line that moves from 2/4 to 3/4 and back to 2/4. The score includes various dynamic markings (f, p, mp, ff, pp, mf) and performance instructions (quasi senza misura, a tempo, pizz., arco, gliss., 8va, 8ub). The tempo changes from 104 whimsical to a tempo. The score concludes with the lyrics "I found a weed that".

Picc. *f* *p* *quasi senza misura* *mp* *ff* *a tempo* *p* *pp*
 B. Cl. *f* *p* *quasi senza misura* *mf* *ff* *a tempo* *p*
 Vln *f* *p* *quasi senza misura* *mp* *ff* *a tempo* *p*
 VC *f* *p* *pizz.* *quasi senza misura* *mf* *gliss.* *ff* *a tempo* *p* *arco* *mp*
 Voice *quasi senza misura* *a tempo* *mp* *p* *f*
 I found a weed that
 Pno. *f* *quasi senza misura* *mp* *ff* *a tempo* *p* *gliss.* *8va* *8ub*

7

molto rit.

pp *p* *mp* *p* *f*

pp *p* *mp* *p* *f*

pizz. *pp* *p* *arcp* *p* *mf* *pizz* *gliss.* *sf*

pp *p* *f* *p* *f* *suddenly operatic* *ff*

had a mir - - - ror in it and that mir - - -

mf *p* *p* *mf* *gliss.* *8^{vb}* *sf*

molto rit.

a tempo

13 *ff* *fl.t.* *p* *mp* *p*

sf *sul pont* *p* *mp* *p* *p*

a tempo *ff* *sul tasto* *norm* *mp* *p* *p*

arco *f* *p* *mp* *p*

a tempo *as at first mp* *p* *mp* *p*

looked in at a mir - - - ror in me

sf *p* *mp* *p*

19

The musical score consists of four systems. The first system shows the piano introduction in measures 19-23. The right hand plays a descending eighth-note scale (F4, E4, D4, C4, B3, A3, G3, F3) in measure 19, followed by rests. The left hand has whole rests until measure 23, where it plays a descending eighth-note scale (F3, E3, D3, C3, B2, A2, G2, F2). The second system continues the piano introduction. The right hand has whole rests. The left hand has whole rests until measure 23, where it plays a descending eighth-note scale (F3, E3, D3, C3, B2, A2, G2, F2) with a 'pizz' (pizzicato) marking. The third system contains the vocal entry. The right hand has lyrics: 'that had a weed _____ in it'. The notes are: quarter note F4, eighth note E4, quarter note D4, quarter note C4, quarter note B3, quarter note A3, quarter note G3, quarter note F3. Dynamics are *pp* for 'that', *mp* for 'had', *p* for 'in', and *ppp* for 'it'. The fourth system shows the piano accompaniment. The right hand has whole rests. The left hand has whole rests until measure 23, where it plays a descending eighth-note scale (F3, E3, D3, C3, B2, A2, G2, F2) with a *p* (piano) marking.

pp

pp

pizz

pp

pp *mp* *p* *ppp*

that had a weed _____ in it

p

3. Cascadilla Falls

♩ = 126 *Con fuoco*

79

Fl. *ff* *fp* *f* *ff* *f* fl.t.

Cl. *ff* *mf* *f* *ff*

Vln. *sf* *sf* *sf* *mf* *f* *ff* *f*

Vc. *sf* *sf* *sf* *mf* *sf* *fp* *ff* *f* arco *f*

Voice *Con fuoco* *mf*
I went down

Pno. *ff* *mf* *f* *ff* *ff*

Detailed description: This musical score is for a piece titled '3. Cascadilla Falls'. It is marked with a tempo of 126 beats per minute and the instruction 'Con fuoco'. The score is written for a full orchestra and voice. The instrumentation includes Flute (Fl.), Clarinet (Cl.), Violin (Vln.), Viola (Vc.), Voice, and Piano (Pno.). The key signature has one flat (B-flat major or D minor). The time signature changes from 9/16 to 3/8, then to 7/16, and finally to 2/4. The score is divided into measures, with some measures containing multiple beams indicating sixteenth notes. Dynamics are indicated by various markings: *ff* (fortissimo), *fp* (fortissimo piano), *f* (forte), *mf* (mezzo-forte), *sf* (sforzando), and *fl.t.* (flauto traverso). The voice part enters in the final measures with the lyrics 'I went down'. The piano part provides a rhythmic foundation with chords and moving lines.

8

f *mp* *f* *f* *mp* *f* *mf* *pizz* *f*

subito p *subito p* *mp* *f*

I went down I went down by Cas-ca - dil-la falls this ev' ning

f *f*

16

fp *f* *p* *pp* *mp* *mf* *f*

arco *pizz* *arco* *pizz* *arco*

f *mp* *mp* *pp* *mf* *f*

mf *chest voice* *f*

Cas-ca - dil - la falls_ this ev' ning the streams_ be-low__ the

22 fl.t.

mf *mf* *poco* *mf* *p* *mp*

mf *p* *mf* *mf* *f* (b)

sul pont. pizz (norm) arco sul tasto sul pont. norm. sul pont.

mf *p* *mf* *mf* *f* *f* *f* *f*

sul tasto *mf* *p* *mf* *mf* *f* *f* *f* *f*

p *mp* *f* *f* *mf*

falls and picked up a hand - sized - stone kid ney shaped tes ti-cu-lar and thought all its

mp *mf* *f*

28

norm. *sf* *f* *mf*

sul pont. *f* *mf*

sul tasto *f* *mf*

norm. *p* *mf*

sul pont. *mf*

arco norm. *p* *mf*

f

mo - tions in - to it

the eight hun - dred

with pulse and momentum *mf*

8va

32

mp *mf* *p* *mf* *f*

mp *mf*

mp *p* *mf* *norm.* *mf* *norm.*

mp *mf* *f*

miles per hour— earth spin the one hun - dred nine - ty mil - lion mile— year - ly

(8) *p* *mf* *mf*

36

f *pp subito* *p* *mp* *p* *pp* *mp* *p*

f *pp subito* *p* *mp* *p* *pp* *mp* *p*

f *pp subito* *p* *mp* *p* *pp* *mp* *p*

p *mf*

dis-place-ment a-round the sun the o-ver-ri - ding grand haul of the ga - la - xy with the thir -

sul pont *norm*

43

mf *pp* *mp* *p* *mf* *sub p* *sub p* *legatiss* *cresc <*

- ty thou - sand miles per hour of where the sun's go - ing thought all the

mp *p* *pp* *p* *mf* *sub p* *legatiss*

51 *cresc*

cresc *mf* *ff*

cresc *mf* *ff* *8va*

cresc *mf* *ff*

f *quasi senza misura, freely* *f* *p* *mf*

in - ter wea - ving mo - tions in to my self dropped the stone to dead rest the

cresc *mf* *ff* *8va*

cresc

58 *a tempo*

a tempo

p *mp* *f* *ff*

a tempo

pizz *arco* *f* *ff*

a tempo

p *mp* *f*

a tempo

stream from o - ther mo - tions

a tempo

f *ff*

62

f *fp* *f* *sf* *f* *ff*

mf *f* *f*

broke ru-shingo-ver it shel-ter-less I turned

mf *f*

Detailed description: This musical score block contains measures 62 through 67. It features a piano accompaniment and a vocal line. The piano part consists of two staves. Measures 62-67 show various rhythmic patterns, including eighth and sixteenth notes, and rests. Dynamic markings such as *f* (forte), *fp* (fortissimo piano), *sf* (sforzando), *ff* (fortissimo), *mf* (mezzo-forte), and *f* are used throughout. The vocal line is on a single staff, with lyrics written below the notes. The lyrics are: "broke ru-shingo-ver it shel-ter-less I turned". The score includes measure numbers 62, 9, 16, 3, 7, 16, 3, 4, and 4. The key signature changes from one flat to two flats, and the time signature changes from 8/8 to 9/16, 3/8, 7/16, 3/8, and 4/4.

rit. ♩ = 76 calmer

68

fp *f* calmer

fp *f* calmer

fp *f* calmer

fp *f* calmer

ff *poco* *calmer* *mp*

to the sky and stood still Oh I

rit. ♩ = 76 calmer

f *mp* *legatiss*

73

mp *legatiss*

mp *legatiss*

mp *legatiss*

do not know _____ where I _____ am go - ing _____ that I can live my life _____

mp *legatiss*

sempre pedale

78

lunga

ppp

pp *p* *pp*

lunga

lunga

p

lunga

lunga

by this sin - gle creek

p

mp

lunga

lunga

4. Perfection

senza misura $\text{♩} = 63$

Fl. *mf* senza misura *f* *mp*

B. Cl. *mf* senza misura *f* *p* *pp* *pp* *p*

Vln. senza misura *pp* *mp* *pp*

Vc. senza misura *pizz* *arco* *sul pont* *norm* *p* *pp* *mp* *pp* *p*

Voice senza misura *mf* *p* *mp*
o, o, o, o,

Pno. senza misura $\text{♩} = 63$ *p* *p* *mp* *p*

5

pp *p* *mp* *f* *mp* 6

p *pizz* *arco* *p*

mf 3 *ff* 3 *mf*

o, o o, o, on - ly them selves un -

pp *p* *mp* *p*

tr *ped.* * *ped.* *

[illegible]

14 *a tempo*

a tempo

a tempo

a tempo

a tempo

mp *p* *mp* *p* *mp* *mf*

p *p* *p* *p*

mp *p*

as souls on - ly un - der - stand souls

mp *p*

mp *p*

* Ped. * Ped. *

[illegible]

5. Love Song

♩ = 60 light, contained

Fl.

Cl.

Vln.

Vc.

con sord very little vib

sempre *p*

sempre *p*

sempre *p*

sempre *p*

freely

sfp *mf* *sfp* *f* *p*

Rings of bir - ch bar - k

mp

stand in the

♩ = 60 light, contained

3

sempre *pp*

Pno.

Red.

fl.t.

5

woods

still

cir - cling

cir - - - cling

pp

(half off)

sempre simile

The musical score is written for a vocal soloist and piano. The vocal part is in treble clef, and the piano part is in grand staff (treble and bass clefs). The key signature has one sharp (F#), and the time signature is 3/4. The score is divided into two systems. The first system contains measures 1 through 4. The second system contains measures 5 through 8. The lyrics are: "woods", "still", "cir - cling", and "cir - - - cling". The piano part includes a fortissimo (*pp*) marking in measure 5. Performance instructions include "(half off)" at the end of measure 5 and "*sempre simile*" at the end of measure 8. The vocal part features a five-measure rest in measure 5, indicated by a "5" above the staff. The piano part features a triplet of eighth notes in measure 5, indicated by a "3" above the staff. The vocal part features a five-measure rest in measure 6, indicated by a "5" above the staff. The piano part features a five-measure rest in measure 6, indicated by a "5" above the staff. The vocal part features a five-measure rest in measure 7, indicated by a "5" above the staff. The piano part features a five-measure rest in measure 7, indicated by a "5" above the staff. The vocal part features a five-measure rest in measure 8, indicated by a "5" above the staff. The piano part features a five-measure rest in measure 8, indicated by a "5" above the staff.

11

11

cir - cling, cir cling, cir-cling, cir - cling the near - ly va - nished log

fp

17

ppp *mp* *ppp*

ppp *mp* *ppp*

ppp *p* *mf* *pizz* l.v.

ppp *p* *mf* *pizz* l.v.

mp *mf* *p*

af - - - ter we go to pass through log and

3 l.v.

7 7 l.v.

l.v.

l.v.

Meno mosso

23

ppp

p arco

con sord arco *ppp*

fp

star_____

p

the white song_____ will hug us_____

poco

mp

loco

Meno mosso

29

p

con sord arco *p*

mp

p

pp

hold as long as possible

— to - ge - ther in the woods of — some lo - - ver's head —

poco rit.

35

p < >

pppp

p

pp

ppp

ppp

pppp

QUILTING TIME AND MEMORY: THE MUSIC OF UNSUK CHIN

Part II

A Dissertation

Presented to the Faculty of the Graduate School

of Cornell University

In Partial Fulfillment of the Requirements for the Degree of

Doctor of Musical Arts

by

Kay Kyurim Rhie

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QUILTING TIME AND MEMORY: THE MUSIC OF UNSUK CHIN

Kay Kyurim Rhie, D.M.A.

Cornell University 2009

Unsuik Chin's (1961 – current) music started to receive a European recognition in the mid-1990s with her chamber work *Akrostichon-Wortspiel* and the 2004 Grawemeyer Award-winning *Violin Concerto* has brought her attention in North America as well. Still considered somewhat of a recent discovery, listeners and critics have been intrigued by the composer whose musical origin is multifaceted. While trained in the Darmstadt school, Chin demonstrates a facile application of diverse musical traditions, classical and ethnic. The dissertation attempts to introduce the composer's life and works so far, and to investigate the compositional process focusing on the topics of micro- and macro-rhythm in the composer's recent works.

The first chapter lays out a broad view of the composer's development – her early musical training in South Korea to her current musical activities taking place mostly in Europe where the composer has resided since the 1980s. The chapter will also discuss the composer's general aesthetic styles and concerns.

The second chapter isolates the local rhythm evident in her recent works – *Violin Concerto*, *Double Concerto* and *Cantatrix Sopranica* –, especially the repetitive ostinato technique and the concept of stasis inspired by the Balinese gamelan music.

The third chapter investigates the larger phrase rhythm and formal scheme in the same three works, focusing on still the concept of repetition, but growing by addition of blocks and layers.

BIOGRAPHICAL SKETCH

Kay Kyurim Rhie studied composition at the University of California, Los Angeles where she received her bachelor's and master's degree studying with Paul Chihara, Ian Krouse and David Lefkowitz. At Cornell University she has studied with Steven Stucky and Roberto Sierra.

Her music has been performed at the London Festival of American Music, the Tangle Music Center, the Seal Bay Music Festival, the Banff Centre for the Arts, the Chamber Music Conference and Composers' Conference of the East, the Aspen Music Festival and School and the Ojai Music Festival among others. She was a 2008 Charles Ives Fellowship recipient from the American Academy of Arts and Letters.

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TABLE OF CONTENTS

Biographical sketch	iii
Acknowledgments	iv
Table of contents	v
List of figures	vi
List of tables	viii
Chapter 1. Introduction to Unsuk Chin and her music	1
Chapter 2. Eternal and cyclic time: gamelan and repetition	23
Chapter 3. Growing time: continuous growth to block form	52
Conclusion	85
Appendices	
I. Formal graph of <i>Double Concerto</i>	87
II. Analysis of <i>Double Concerto</i>	
Material key legend	90
Sectional analysis	92
III. Composer's sketches	
Sketches of <i>Double Concerto</i>	106
Sketches of <i>Violin Concerto</i>	110
Bibliography	114

LIST OF FIGURES

Figures 1.1a: Chin, Unsuk. <i>Double Concerto</i> , mm. 379-385	12
Figures 1.1b: Chin, Unsuk. <i>Violin Concerto</i> , mm. 112-117	13
Figures 1.1c: Chin, Unsuk. <i>Piano Etude No. 6 'Grain', VI</i> , mm. 1-23	14
Figures 1.2: Chin, Unsuk. <i>Akrostichon-Wortspiel, I</i> , mm. 1-6	16
Figures 1.3: Chin, Unsuk. <i>Spectre Speculaire</i> , ending	21
Figures 2.1: Closing section to <i>gending Tembung</i> , from <u>Music in Bali</u>	29
Figures 2.2: Chin, Unsuk. <i>Double Concerto</i> , mm. 1-5	30
Figures 2.3: Rhythmic map of the first five bars of, <i>Double Concerto</i>	30
Figures 2.4: Réongan players' small gongs, from <u>Music in Bali</u>	33
Figures 2.5: Réong interplay, from <u>Music in Bali</u>	34
Figures 2.6: Isolated Réong pattern, from <u>Music in Bali</u>	34
Figures 2.7: Réong pattern, from <u>Music in Bali</u>	35
Figures 2.8: Chin, Unsuk. <i>Violin Concerto</i> , mm. 1-5 (opening marimba part)	35
Figures 2.9: Chin, Unsuk. <i>Double Concerto</i> , mm. 1-4 (opening piano part)	35
Figures 2.10: Chin, Unsuk. <i>Violin Concerto</i> ,	37
Ostinato rhythm in the opening marimba	
Figures 2.11: Chin, Unsuk. <i>Violin Concerto</i> , mm. 2-3 (opening violin part)	38
Figures 2.12: Chin, Unsuk. <i>Violin Concerto</i> , mm. 2-3 (rhythmic reduction)	38
Figures 2.13: Pitch distribution pattern played by marimbas in	39
<i>Violin Concerto</i>	
Figures 2.14: Pitch deployment pattern, mm. 1-5, <i>Double Concerto</i>	41
Figures 2.15: Pemungkah; conclusin of opening section, from <u>Music in Bali</u>	43
Figures 2.16: Chin, Unsuk. <i>Double Concerto</i> , mm. 1-6 (solo percussion part)	43
Figures 2.17: Chin, Unsuk. <i>Violin Concerto</i> , mm. 182-194	46-47

Figures 3.1: Chin, Unsuk. <i>Cantatrix Sopranica, II</i> , mm. 98-104	53
Figures 3.2: Chin, Unsuk. <i>Cantatrix Sopranica, VI</i> , mm. 14-27	54
Figures 3.3: Chin, Unsuk. <i>Cantatrix Sopranica, II</i> , mm. 1-8	56
Figures 3.4: Chin, Unsuk. <i>Cantatrix Sopranica, II</i> , mm. 1-8 (composite Pitch and Rhythm)	58
Figures 3.5: Chin, Unsuk. <i>Cantatrix Sopranica, II</i> , mm. 18-26	59
Figures 3.6: Chin, Unsuk. <i>Cantatrix Sopranica, II</i> , mm. 45-52	62
Figures 3.7: Chin, Unsuk. <i>Violin Concerto</i> , mm. 50-56	64
Figures 3.8: Chin, Unsuk. <i>Violin Concerto</i> , mm. 50-56 (growth of pitch pattern)	64
Figures 3.9a: Chin, Unsuk. <i>Cantatrix Sopranica, III</i> , mm. 1-3 (oboe/clarinet)	65
Figures 3.9b: Chin, Unsuk. <i>Cantatrix Sopranica, III</i> , mm. 8-14 (oboe/clarinet)	66
Figures 3.9c: Chin, Unsuk. <i>Cantatrix Sopranica, III</i> , mm. 20-25 (oboe/clarinet)	66
Figures 3.10a: Chin, Unsuk. <i>Double Concerto</i> , mm. 38-39 (harp part)	66
Figures 3.10b: Chin, Unsuk. <i>Double Concerto</i> , mm. 81-82 (harp part)	66
Figures 3.10c: Chin, Unsuk. <i>Double Concerto</i> , mm. 112-115 (harp part)	67
Figures 3.10d: Chin, Unsuk. <i>Double Concerto</i> , mm. 258-260 (pitched cowbell)	67
Figures 3.10e: Chin, Unsuk. <i>Double Concerto</i> , mm. 294-298 (harp part)	67
Figures 3.11: Chin, Unsuk. <i>Cantatrix Sopranica, IV</i> , mm. 14-19	70
Figures 3.12: Chin, Unsuk. <i>Cantatrix Sopranica, IV</i> , ending	72
Figures 3.13: Chin, Unsuk. <i>Cantatrix Sopranica, VII</i> , mm. 43-48	77
Figures 3.14: Chin, Unsuk. <i>Double Concerto</i> , mm. 7-11	78
Figures 3.15: Chin, Unsuk. <i>Double Concerto</i> , mm. 119-130	79
Figures 3.16: Chin, Unsuk. <i>Double Concerto</i> , mm. 166-172	80
Figures 3.17: Chin, Unsuk. <i>Double Concerto</i> , mm. 306-311	81
Figures 3.18: Chin, Unsuk. <i>Double Concerto</i> , mm. 402-405	83

CHAPTER 1

INTRODUCTION TO UNSUK CHIN AND HER MUSIC

When Unsuk Chin's *Violin Concerto* received the prestigious Grawemeyer Award in 2004 and Deutsche Grammophon released Chin's first CD the following year, it brought attention to the composer whose reputation in Europe had not quite yet spread to the American continent. Still considered a relatively recent discovery, Chin's music, however, is attracting more curious ears, drawing listeners to understand, or decipher, the complex and elusive beauty of her sonic world.

It is interesting to observe that many writings about her music begin with the very attempt to 'figure out' what gives her music a 'mobile, evanescent and perhaps illusory' quality.¹ One critic starts out an enthusiastic article reviewing Chin's album with a challenge to give it a label: "Define this music," the critic demands.² Another noted writer, Paul Griffiths, also begins his article on Unsuk Chin's music with a similar objective – to decode its origin: "This iridescence, where does it come from?"³

Unlike some attempts at pigeonholing Chin's music as either 'Darmstadt' (not only the place of her training but a definitive composition school), or Korean (not only the place of her birth but a definitive nationalistic style), Chin's music exhibits many sources of musical and extra-musical influence. It evokes a broad palette of musical

¹ Paul Griffiths, "An introduction to the music of Unsuk Chin" (2003) from Boosey a Boosey and Hawkes Online, 22 Mar. 2005, <<http://www.boosey.com/pdf/brochure/2754/pdf>>

² Anne Midgette, 'Classics for the Guitar, Bittersweet and Warm.' (review of Chin's CD) New York Times (April 3, 2005); "Define this music; it keens and peeps and trill and flirts with words and meanings and fragments of sound; it's rigorously organized; it's expressionistic; it makes Asian sounds on [western] instruments..."

³ Griffiths, (2005) "This iridescence, where does it come from: Colours shimmer, float and weave over Unsuk Chin's music, and their sources are multiple..."

experiences, both old and new, marking her as a true hybrid, modernist as well as postmodernist. In recent years, her earlier, fastidious avant-garde style has evolved to embrace hybridization of various musical traditions. Chin's recent works such as *Violin Concerto* (2001) and *Double Concerto* (2002) exhibit techniques and aesthetics of Balinese gamelan music, while *snagS & Snarls* (2003-04) and *Cantatrix Sopranica* (2004-05) allude to a wide range of tonal traditions from Baroque aria to Chinese Peking Opera to simple folksong. Underlying such a broad stylistic spectrum, though, are her ongoing concerns: non-traditional, or non-teleological, narrative, and timbral construction that often blurs the boundary between acoustic instruments and artificial sound sources. This paper will discuss Chin's recent compositions and the different musical traditions that have given rise to her distinctive voice. The current chapter will introduce Chin's biography and the development of her musical language in the earlier works, especially those from the 1990s.

Born in 1961 in Seoul, Korea, Chin showed an early interest and talent for music, but in an interview with me in 2001 in Los Angeles she recounted the difficulties of studying music in Korea unless one was from a wealthy family.⁴ Chin's first musical interest was piano performance, but her family's financial situation prevented her from taking expensive private lessons. Instead, she played piano as an accompanist in the church where her father was ministering; later, in college, she continued playing for church functions to earn a living. The idea of becoming a composer was sparked when her grade school teacher encouraged her to pursue composing rather than piano performance. As a result, Chin decided on a career as a composer when she was thirteen.

I didn't get formal lessons in piano and music theory at all. My father taught me the basics of reading music and we had a piano at home.... I read books to learn about harmony and

⁴ Interview with the author, May 2001, Los Angeles.

counterpoint. I was always listening to music - even in class[es] I would play music over in my head and work out all the intervals I could hear... I taught myself composing through copying musical scores such as Tchaikovsky's symphonies.... I was autodidactic until I won [on the] third attempt a place to study composition at the Seoul National University.⁵

During her college years, at the National University Seoul, Chin's mentoring came from Sukhi Kang, to whom contemporary Korean music owes much.⁶ In 1969, Kang established the Pan Music Festival, modeled after the Warsaw Autumn, and introduced international avant-garde music to Korea. He then studied in Berlin from 1970 to 1976 and was artistic assistant at the Berlin Technical University's electronic studio, solidifying the German-Korean connection that originated with Isang Yun. Yun, a long-time resident of Berlin as well as "spiritual father to several generations of Korean composers," sought a way to write traditional Korean music using a Western language.⁷ A pupil of Yun, Kang thought "music is invisible architecture" which needs rigorous structural foundation. His view was that "if the internal structure is firm, the external surface beauty will take care of itself."⁸ His musical concerns were, like his teacher, to incorporate traditional Korean elements and continue a Varèse-like experimental strain often aided by the electronic medium. The ways to recreate the traditional Korean elements in the modern musical language included: 1) natural echo, as when a large Korean temple bell is struck with a wooden beater and reverberates; 2) modifying the tone after the attack, as when a kayagum (a twelve-stringed zither invented during the sixth century A.D.) player presses and forms vibrato; 3) silence – how the music continues into the rests.⁹

Unsuk Chin says that she learned and absorbed an avant-garde language

⁵ Interview with US Asians. July 2007. <<http://usasians-articles.tripod.com/unsuk-chin.html>>.

⁶ David Babcock, Korean Composers in Profile, *Tempo*: No.192 (1995):15.

⁷ Ibid.

⁸ Ibid.

⁹ Ibid, p.16.

thoroughly from Sukhi Kang during her time in college. She appeared as pianist at the Pan Music Festival multiple times, and in 1984 her composition *Gestalten* (“Figures”) was selected for the ISCM World Music Days in Canada and for the UNESCO Rostrum of Composers. These successes led to her winning a DAAD stipend to study in Germany. In 1985 she moved to Hamburg to study with György Ligeti, a period she recalls as exciting yet challenging. She had wanted to leave the politically unstable Korea under a military dictatorship and wanted to move to a more open society.

Chin’s first impression of Ligeti was a warm one – the master composer was generous and sensitive. She remembers how Ligeti used to prepare snacks for the students on the day of the composition classes.

Ligeti would have his students over at his place for composition classes. He would usually bring out bread and cheese, but every time I was there, he would have *milchreis*¹⁰ as well. That was out of his considerateness because he thought I, coming from Asia, needed to eat rice.¹¹

Musically speaking, however, it was not an easy transition for Chin by any means. The “warmth” would all of a sudden disappear into a mound of harsh, picky comments:

At that time I already had had success in two important international competitions. But when I showed him these prize-winning pieces, he would only shake his head and say: “Throw all this away. There is nothing original in these pieces.” This was very hard, though I somehow knew myself that I hadn’t found my own voice in these works. I had a compositional crisis, which lasted for three years: I couldn’t compose anything.¹²

Ligeti insisted that each student develop his or her own language instead of belonging to a stylistic school.

¹⁰ A type of rice pudding found in European supermarkets.

¹¹ Unsuk Chin, *Ligeti that I met*, 2007 *The SPO Magazine*, (Spring, 2007): 21. translated by the author.

¹² Interview with US Asians.

Gradually with time, however, I realized that his criticism was even more stringent toward himself. One day we were all together listening to a Mozart piano concerto. Afterwards, Ligeti helplessly flopped onto a couch with tragic face and muttered to himself, “I have not invented anything until now.”¹³

During the three years with Ligeti, Chin not only learned her new teacher’s musical techniques but found a like-minded personality in her professor. The way she approaches her career as a composer and looks at music as an art form also shares many commonalities with Ligeti as well: for example, the unceasing desire to reinvent oneself at the expense of a more prolific compositional career,¹⁴ nonchalance towards ‘success’ as recognized by the musical establishment and a critical eye towards being safe in one’s own music.

Ligeti was working on his *Piano Concerto* in the three years Chin spent with him, as the older composer continued his quest for new inspirations and new sound. According to Ligeti’s sketches kept in the Sacher Foundation in Basel, his initial attempt to write the first page of the *Piano Concerto* dates to 1980. After more than twenty sketches, only the draft dating from 1985-86 finally shows resemblance to the first movement of the piece as we now know it.¹⁵ Also taking shape during this period were the first six *Piano Etudes* (1985), which reveal Ligeti’s stylistic experimentation with polymetric music inspired by influences such as Conlon Nancarrow, mathematics, *ars subtilior*, the African Banda-Linda, and tonal and metrical machines. Because there was no procedural precedent, Ligeti had to formulate a new language, which took him several years, just as *Aventures* did twenty years earlier.¹⁶

¹³ *Ligeti I met.*

¹⁴ Ligeti used to say “After each completed composition I revise my position; I avoid stylistic clichés, and know no ‘single right way.’ I keep myself open to new influences, as I am excessively intellectually curious. All cultures, indeed the whole wide world is the material of Art.” From Ligeti’s notes to SK 62331, CD 4 in the *György Ligeti Edition* (1996).

¹⁵ Richard Steinmetz, *György Ligeti: Music of the Imagination*, London: Faber and Faber Ltd, 2003, 315.

¹⁶ *Ibid.* p. 321.

Continuous renewal was not the only way to describe Ligeti, who actually exhibited a set of constants in his aesthetic inclinations throughout his career. Perhaps these characteristics are best discussed in the non-musical works of the artists Ligeti deeply admired: such writers as Sandor Weores, Franz Kafka and Lewis Carroll, and painters such as Pieter Breughel and M. C. Escher. These artists' works share a common sensibility in expressing a surreal world of fantasy in which disparate elements coexist.¹⁷ In the fantastical world where impossible and unimaginable things happen, these artists found a haven for boundless imagination. Humor and paradox, the absurd and the ridiculous abound in such a world. Cynics and the childlike can both find things to savor there.

Fantasy and paradox might also explain Chin's concept of time in her music, both on global and local levels. Chin is often interested in musical events that are unpredictable, meaning the events, for example, take sudden and unexpected changes of direction, or linger in a long, repetitive texture. Time, in this fashion, seems sometimes frozen or progressing at a pace faster than normal. A visual parallel might be something like this: a viewer is looking at a picture, zoomed in on one spot and locked in, and then suddenly taken to a distant bird's-eye view. Chin often sets up a pace but manipulates it as if she is defying gravity, or resisting the natural teleological progression. In such a non-linear narrative, the listener experiences something akin to a 'warped' sense of time, as if he/she has been taken outside the real world and entered a fantastical one.

¹⁷ For example, both Weores and Carroll wrote a number of children's verses that contain an extra layer of meaning for grown-ups. Carroll was also a writer who experimented with non-sense rhymes and word games such as Doublets. Breughel painted the peasant life in the 16th century Netherlands but often included strange and vulgar details in his paintings. The Dutch artist Escher created woodcuts and lithographs that showed mathematical details of architectures that are full of maze-like, and often impossible, constructions.

Instead of the goal-oriented narrative that has dominated Western classical music for centuries, twentieth-century composers have increasingly sought ways to reinterpret time in music. (I will discuss this in Chapter 2 in detail.) Russian ritual music had inspired Stravinsky to boldly use repetition as one of the main form-building tools in music, giving birth to block form. The meditative nature of gamelan music had inspired Debussy to inject the hypnotic lure of ‘stasis’ into his music. It is noteworthy how Chin, whose music frequently features repetition, patchwork-like block form and stasis, names Stravinsky and Debussy as her continuous inspiration during her interview with me. She seems to want the listener to experience time as not of the present, but of the distant past or future, as if one is traveling through one’s elusive dream, or better yet, memory.

The taste for paradox and humor in Chin’s music, for example in *Akrostichon-Wortspiel*, *Cantatrix Sopranica*, and *Alice in Wonderland*, can also be explained when one looks at her personal history. Distance from the real world, or from direct emotional seriousness, can be understood perhaps by looking at the early years of both Chin and Ligeti, whose lives were filled with setbacks. Ligeti, who lost his family in Nazi concentration camps, struggled not only to teach himself music but simply to survive through this terrifying part of history. Ligeti’s later comment describes succinctly his attitude toward seriousness in art:

Anyone who has been through horrifying experiences is not likely to create terrifying works of art, in all seriousness. He is more likely to alienate.¹⁸

Chin was also an autodidact during the post-war turmoil in Korea, when the nation was suffering from political chaos and financial strain.¹⁹ It is perhaps not a

¹⁸ György Ligeti, *György Ligeti in Conversation* London: Da Capo Press, 1983.

¹⁹ Not only Chin’s family did not give her any financial support to study music, but at one point Chin’s older sister, a college student at the time, was a fugitive from police because of her participation in the student movement against the military dictatorship. From the interview with the composer in May 2007.

coincidence that her younger brother, Chung-gwon, became an outspoken critic of social and political reality in Korea as well as a writer on aesthetics.²⁰ Chin's penchant for play-logic in music is revealed also in her brother's book *Nori wa yesul, kŭrigo sangsangnyŏk*²¹ (Games, Arts and Imagination). In his book Chung-gwon Chin introduces twenty different types of play, puzzles and games that are incorporated in works of art and discusses the process through which the artist's imagination takes shape in the form of a game itself. The game concepts he discusses in the book include "hide-and-seek," anagram, anamorphosis,²² dice throw, the game of chess, acrostic play, maze, and chaos/cosmos, among others.

The fact that a work of art can also be a game and that it is about the natural as well as the artificial is a paradox, and such paradox in Chin's music renders another layer of logic and a distinct voice. The paradox manifests in her vocal music in the playful, game-like treatment of the text. Works like *Akrostichon-Wortspiel* and *Cantatrix Sopranica* are examples of the text being used as the sound source or as material for word games. In her instrumental works, the paradox is easily detected in the presence of the two contradictory physical states – e.g. stasis and movement. Works like *Fantaisie mécanique* and *Double Concerto* set up contrasting timbral layers that often move at different speeds to express the concept of stillness and dynamism. The layers take on a variety of shapes and trajectories as the piece progresses; moving figures often turn into stillness, and the once sustained note breaks down to a busy web of sounds. The piece would constantly juxtapose (horizontally)

²⁰ His book *Mihak odisei* (A Journey in Aesthetics: published by Hyumanisutu, 2004) is widely read in Korea.

²¹ Seoul: Hyumanisutu, 2005.

²² Anamorphosis, as defined by Merriam Webster Online Dictionary: Distorted optical image. It is also used to denote the aspect, or trick, of certain artworks that requires the viewer to use special devices or occupy a specific vantage point to reconstitute the image. The earliest known example is Leonardo da Vinci's *Leonardo's Eye* from c.1485.

and stratify (vertically) the two contrasting material states of either stasis or movement.

An acute concern for the material state of sound was fine-tuned when Chin finished studying with Ligeti and moved to Berlin in 1988 to work at the Electronic Music Studio of the Berlin Technical University. After three years of silence, she slowly began to compose again, this time with a new realization that it was no longer necessary to be held hostage to the Darmstadt school and its ideology. Some of the earliest compositions Chin keeps to this day – as she is very stringent about keeping works only if she strongly believes in their quality – date from this period, among them, *Die Troerinnen* (The Trojan Women) (1986) for 3 female singers, female chorus and orchestra and *Gradus ad Infinitum* (1989) for tape. Despite financial difficulties as a freelance composer, Chin considers this period and the experience of working with electronics vital to her development.²³

Starting with *Gradus ad Infinitum*, Chin worked on a number of electronic pieces in the 90s: *El Aliento de la sombra* (1992, for solo tape), *Allegro ma non troppo* (1993/94, for solo tape, another version in 1998 including solo percussion), *ParaMetaStrings* (1995/96, for string quartet and tape), and *Xi* (1998, for tape and ensemble). In *Gradus ad Infinitum*, Chin experiments with writing a “virtuosic counterpoint exercise” for electronic sounds.²⁴ In this piece, she divides the octave into a scale of 20 microtones, with which she writes an eight-voice counterpoint consisting of four two-voice canons. Despite its structural meticulousness, the sum effect is closer to chaos than to order due to the dense texture. Ehrler compares the

²³ Ibid.

²⁴ Hanno Ehrler: “Ordnung, Chaos, and Computer,” *MusikTexte* 96, 2003, Pages 4-10, translated by Hee Kyong Lee from German to Korean, translated by the author from Korean to English.

type of virtuosic concept in Chin's music to Conlon Nancarrow's Studies for Player Piano.²⁵

In *Allegro ma non troppo* for solo tape and percussion, Chin first visits sounds that can be heard in everyday life as her source material: for example, the sound of paper being crushed, grandfather clock chimes, keychains, and water drops. Habakuk Traber identifies the working process of the composer: "these source materials are combined with sounds from percussion instruments and processed through electronic filtering. The resulting work frequently intersects the boundary of noise and pitch. For example, what was originally noise would be combined with a triad to take on an unexpected harmonic direction. The water drip noises were combined with clock-ticking noise and the sound of metal hitting glass to produce a new, synthetic sum."²⁶ The composer's main objective in this piece seems to be to transition from one timbre to another seamlessly, as if she is exploring timbre as the primary compositional parameter and harmony as the secondary, or rather hidden, element.

In that sense, *Allegro ma non troppo* was in many ways a precursor to *Xi* for ensemble and electronics, written in 1999. In *Xi* (meaning 'kernel' or 'the smallest source unit' in Korean), Chin looks, again, to a non-synthesized, acoustic sound source to start the piece – in this case, the piano. Chin generated a set of related sounds by hitting a variety of spots inside the piano with the pedal down.²⁷ The sound sources were then processed through granular synthesis and turned into smallest 'grains,' anywhere from five to twenty microseconds. These grains became the basic compositional blocks of the piece.

²⁵ Ibid.

²⁶ Habakuk Traber, *The Spirit of Avant-garde*, The SPO Magazine (Program notes for a concert by the Seoul Philharmonic Orchestra) March 2007, translated by Hee-Kyoung Lee from German to Korean, translated by the author from Korean to English.

²⁷ From the interview with the composer, May 2006

The ‘granular’ quality in sounds appears in acoustic pieces as well. Electronically synthesized granular texture is translated as repeated percussive attacks in various forms and shapes in Chin’s instrumental works such as *Double Concerto* (Figure 1.1a), *Violin Concerto* (Figure 1.1b), and *Piano Etude No. 6 ‘Grain’* (Figure 1.1c). This is an example of how Chin borrows her experience in the electronic lab to help imagine new timbre in her acoustic pieces and to develop orchestration skill to mix different colors of sound. In *Double Concerto*, the ‘granular’ section constitutes the main gesture of the second half of the piece, focusing initially on two pitches played by a limited number of percussion instruments, and gradually expanding to a larger collection of pitches and instruments as the section progresses. Following the first half of the piece, which ended with superimposition of intricate rhythmic and timbral layers, the ‘granular’ section creates a contrast with focused simplicity, timbral shift and a welcome release of tension.

In *Violin Concerto*, the third movement takes the idea of repeated attacks of the ‘granular’ texture in a less immediate fashion. The solo violin and the orchestra present repeated attacks, as in the case of *Double Concerto*, but in staggered entries as well as against instruments that play sustained chords. The result is that the granular quality is more veiled and integrated into the whole texture of the entire ensemble.

Piano Etude No. 6, titled ‘*Grain*,’ is a direct commentary of how the composer works with a ‘cellular’ moment to expand and build the entire piece. The tiny musical cells, or a single germinal note, often become a basic building block in Chin’s music as the following examples demonstrate.



Figure 1.1c *Piano Etude No. 6 'Grain'*

It is also noteworthy to see how Chin experimented with applying classical concerns – e.g. a developmental narrative, the contrapuntal principle of juxtaposing related materials, etc. – to electronic sounds. If her experience with electronic music added to her aural imagination, certain classical concerns seem always to have been a constant in her music from earlier in the decade. The mathematical, contrapuntal,

serial, interval-based, and/or collage principles are some of the salient technical features in her music throughout her career. Such tendencies distinguish her as a composer with fundamentally classical tendencies rather than an electronic composer focusing mainly on sound analysis/synthesis. As a result of her continuous work in the electronic lab, however, Chin gained the confidence and fluency to apply the principles of two different media – electronic and acoustic genres – with considerable freedom. A piece she wrote early in her residence in Berlin is an example of imaginative timbral thinking combined with clear classical tendencies. It also is the piece that brought much attention to Chin and jump-started her international career.

Written in 1991 on commission from the Gaudeamus Foundation, *Akrostichon-Wortspiel* (Acrostic-Wordplay) for soprano and ensemble consists of seven scenes from the fairytales *The Endless Story* by Michael Ende and *Alice through the Looking Glass* by Lewis Carroll. Chin randomly mixed up the consonants and vowels from the selected texts and sometimes read the text backwards in order to deconstruct the words, leaving only the symbolic meaning intact.

Each of the seven pieces is constructed around a controlling pitch centre but in their means of expression they are fully differentiated from one another. Seven different situations of emotional states, as described in the fairytales, ranging from the bright to the grotesque are brought to expression.²⁹

Chin asks for piccolo/alto flute, clarinet, harp, violin and double bass to be “tuned anywhere between a quarter and a sixth of a tone higher than concert pitch” to achieve a fine microtonality. The solo soprano then fluctuates between the two tuning systems, depending upon which she perceives at any time. Arnold Whittall recognizes these instructions as a ‘pitch-refinement’ tool often conceived by electro-acoustic composers.³⁰ Whittall points out that such a technique brings a “sense of subtle

²⁹ Boosey & Hawkes, from Composer Catalogue Detail webpage.

<<http://www.boosey.com/cr/music/Unsub-Chin-Akrostichon-Wortspiel/7177>>.

³⁰ Arnold Whittall, “Meditation & mechanics: Unsub Chin in focus” *Musical Times* Spring 2000.

blurring, of reality and fantasy present side-by-side.”³¹ In such a ‘blurred’ environment, it is noteworthy how Chin provides a consistent tonal anchor. For example, the pitch center D in the first movement (Figure 1.2) supplies a stable place to return to after each burst of aural fantasy.

I. Versteckspiel

The musical score for 'I. Versteckspiel' is written for a chamber ensemble. The instruments listed on the left are Fl. in G, Ob., Kla. in B, Mand., Hf., Pf., Schlg., vo Sop., Vn., Bra., and K.B. The tempo is marked 'ca. 50' and 'ca. 92', with sections for 'tempo I' and 'tempo II'. The key signature is A major (A# C# D E F# G#). The score features various musical notations including dynamics (ppp, p, f), articulation (accents, slurs), and performance instructions (e.g., 'Sulla tavola', 'Ant. Zimbeln mit Holzstäbchen', 'sul pont. Flauto'). The lyrics 'wa-re-be-ra let' are written under the vocal line.

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Figure 1.2: *Akrostichon-Wortspiel*

³¹ Ibid.

In their attempt to define Chin's music, writers have often looked to her teacher for comparison. The range of expression in *Akrostichon-Wortspiel* has been matched up to the "theatrical surrealism of Ligeti's *Aventures/Nouvelle aventures*."³² Whittall points out that Chin's work emphasizes "wit and exuberance" rather than the "menace" in Ligeti's work. The 'wit and exuberance' are especially prevalent in the inner movements, drawing a contrast from the opening movement, which shows the influence of the modernist, expressionistic tradition. The third movement, 'Die Spielregel – sträwkcür tieZ' (Zeitrückwards – Reversed Time), shows the playful side of the composer as she musically portrays the title's palindromic construction. For example, each phrase consists of a fast ascent followed by a descent, while similar activities take place at different speeds. Due to the elisions of ascent/descent that occur at multiple levels, the music constantly moves upward and downward, creating a whirlwind-like energy. The vocal part's initial ascent traces the same notes in downward motion as the movement closes.

The text-setting of the fifth movement, 'Domifare S,' and the sixth movement, 'Das Beliebigeitsspiel' (The Game of Chance), seems to carry out the prophetic Dadaist move to free literature from the bonds of narrative and semantic significance. To Dadaist poets, phonetic content became poetry itself as, Schwitters claimed: "... the basic material of poetry is not the word but the letter ..."³³ 'Domifare S' faithfully assigns the solfege as the text as the soprano sings the corresponding pitch to the solfege itself until the pattern breaks and the solfege becomes mere musical gibberish. 'Das Beliebigeitsspiel' takes English alphabets for text, while playing a game of only occasionally using them as musical alphabets as well. Although the acrostic rule is not

³² Whittall, "Meditations & mechanics: Unsuk Chin in focus"

³³ Kurt Schwitters, "Logically consistent poetry" written in 1923 as a contribution to Hans Richter's periodical *F* and cited by the latter in his book Dada: Art and Antiart, trans. David Britt, London: Thames and Hudson (1965):147.

immediately clear to the listener, unless provided with the matrix (as she has done in some concert programs), the delightful wit and the resulting irony of the set text are instantly apparent.

Following *Akrostichon-Wortspiel*, Chin worked on *santica Ekatala* (1993, for large orchestra). Chin's own program notes about *santica Ekatala* (meaning 'harmony to ward off evil consequences' in Sanskrit) describe well her compositional process:

The harmonic structure is made up of varying central keynotes: from the framework of their overtones a kind of tonality in triadic results. I have also allowed myself many things, which were 'forbidden' in the Modernist tradition of music, such as repetition of phrases and consonant intervals. Hence tension is built up and relaxed in a more classical way. The piece is made up of a number of small sections, but there is a musical progression which runs throughout. Concepts which have associations with the course of the work are 'motion' and 'immobility,' 'explosion' and 'implosion.'³⁴

The dual state of motion and stillness is apparent as a core idea even in this earlier work. Chin's having withdrawn this work from her catalog makes it difficult to examine the actual examples of her compositional intentions, but it certainly reveals the composer's recurring approach to conceiving music. A similar musical objective is apparent also in *Fantaisie mécanique* (1994, revised in 1997, for trumpet, trombone, piano and percussion). As the title suggests, she is attempting to recreate in this case "a union of two contradictory concepts: improvisation and predetermined structure."³⁵ Divided into six sections, *Fantaisie mécanique*'s structure reveals Unsuk Chin's meticulous formal thinking based on a mosaic-like, developmental variation principle. Following the Intrada that is "based on four low-pitched sounds,"³⁶ three variations as one section appear in order after which the remaining four sections are named as

³⁴ Program publication by Warsaw Autumn 2005, 48th International Festival of Contemporary Music. <<http://www.warsaw-autumn.art.pl/05/composers/c47.html>>.

³⁵ Boosey & Hawkes Online, Composer Profile Website.

<<http://www.boosey.com/cr/music/Unsuk-Chin-Fantaisie-mecanique/6686>>.

³⁶ Ibid.

follows: “Aria with intervals of a fourth; Little study for keyboards; Episode with metallic elements; Improvisation on seven metres”³⁷. Such description reveals that the composer is designing her episodes around pitch and timbral character. The final *Improvisation* is the rhythmic climax where the seven meters that have been used in the course of the work are combined to form a complex and exciting polyrhythm, culminating in a mixture of mechanical repetition that sounds liberated and improvisatory.

Chin’s *Piano Concerto* (1996/97) is a work that shows one favorite method of creating rhythmic momentum from mechanical repetition – fast motoric gestures woven in the form of dense polyrhythmic texture. She often constructs polyrhythm by layering conflicting rhythmic patterns. In the beginning of the *Piano Concerto* she immediately introduces the polyrhythm in which the solo piano’s sixteenth notes are layered with triplets in the vibraphone and, later, in mandolin and harp. Such complexity, once established, is used with maximum resourcefulness in motoric fashion. Chin emphasizes that in the *Piano Concerto* she wanted to stress the “kinetic vitality and virtuoso aspects – in short, the playful side – of the piano.”³⁸

My Piano Concerto was definitely influenced by a whole range of piano literatures from Scarlatti to contemporary composers. I however tried to bring out above all the aspects of vitality, the kind of physical virtuosity, and the pianistic idioms to the forefront. There are thirty total number of fragments in three movements that are linked together like a patchwork. And the two recurring tutti chords serve as structural pillars of throughout the work.³⁹

Consisting of four movements, each movement exhibits a similar formal principle: from the tiny cell appears a massive, complex entity. Chin’s motifs individually are often simple cells made of limited pitch material and recurring pulse patterns. Such

³⁷ Ibid.

³⁸ Whittall, “Meditations & mechanics: Unsuk Chin in focus”.

³⁹ Ehrler, “Ordnung, Chaos und Computer”.

simplicity of logic becomes the foundation of the massive texture typically found in Chin's music.⁴⁰

Spectre Speculaire (2000, for solo violin and tape) is in many ways a precursor to her *Violin Concerto*, which came two years later. The opening of *Spectre Speculaire* (Figure 1. 3) clearly shows the composer's choice of the timbral quality of the violin's harmonics as the main material. In this case, the timbre Chin chose is a very different environment from the 'blurred' sound field of *Akrostichon-Wortspiel*'s opening. Here, Chin goes instead for clarity and focus in the laser-like quality of the violin's highest register. Added to the violin harmonics is the electronic component of the piece, which supplies polyphony, both harmonically and timbrally. Chin derives from the string overtone series the piece's harmonic foundation and its bass motion, often supplied by the electronic part.

⁴⁰ This principle is not unlike the fractal geometry that fascinated Ligeti.



tres-spéculaires". Copyright 2000 Boosey & Hawkes, London

(Ex.3)

Figure 1.3 *Spectre-speculaires*, ending

Crossing over into the new millennium, the composer has continued to demonstrate similar concerns – clear architectural planning, imaginative timbre, paradox of text setting, paradox of dual states in music – while further exploring the repetitive but at the same time volatile music of the Balinese gamelan. In the survey above, I outlined the development of Chin’s technical languages and aesthetic styles. In the following chapters, I will isolate selected topics of her technical languages and the aesthetic positioning to discuss with regard to her works dating from 2001. In the case of the *Double Concerto*, a detailed analysis of the entire piece will be shown in a chart, thereby illuminating the composer’s design of the piece on the formal level as well as highlighting each of the musical motifs. In relation to *Violin Concerto* and

Cantatrix Sopranica, I will demonstrate a number of ways in which the composer controls time both globally and locally. Global time will address the aesthetics traditions she has embraced – nonlinear narrative and the resulting technique of repetition and block form. On a closer look, the analysis will show how she utilizes rhythmic cells with different period structures and superimposes them to create a sense of progress and development. To illuminate the composer's use of repetition, gamelan technique will be closely examined. Various musical examples of all three recent works will demonstrate methods of the composer's time narrative and aesthetics in the following two chapters.

CHAPTER 2

ETERNAL AND CYCLIC TIME: GAMELAN AND REPETITION IN UNSUK CHIN'S MUISC

Reading some of the descriptions of Chin's music can conjure up contrasting images. While her "rigorously organized"¹ construction strongly implies a lineage to the European modernist tradition, "rarefied sonorities, volatility of expression ... and unexpected turns" point to timbral and formal thinking that is non-doctrinaire. The current chapter will discuss the non-doctrinaire, non-Western influences on the composer's formal and timbral thinking. Form is fundamentally rhythmic because it is the temporal ordering of musical events. The main purpose of the current chapter is to examine gamelan music and its influence on temporal ordering and timbre in Chin's music.

The composer's recent works are surfeited with ostinatos. All three of her recent concertos – *Piano Concerto* (1997), *Violin Concerto* (2001), and *Double Concerto* (2002) – start out with immediate ostinato patterns that are either in the sonic foreground or in the more subtle background. Ostinatos are also prevalent in selected movements in *Cantatrix Sopranica* (2005). While persistent ostinatos most immediately create a static, drone-like quality, ostinatos in Chin's music also create a rhythmic interest that leads to forward momentum. The concept of the ostinato as the basic building block of musical texture originates from the gamelan music of Indonesia. Although gamelan's traces are found beyond the temporal plane of Chin's music, the following investigation will deal first and foremost with significance in the rhythmic arena.

¹ Anne Midgette, New York Times.

In the previous chapter, I have introduced the close connection between electronic technology and the composer's concept of breaking down the sound to its smallest 'granular' unit before reconstructing it. Gamelan shares with electronic music and its granular synthesis technique one fundamental attribute—the musical material is reduced to its smallest cell unit, then is put back together. In the case of gamelan, ostinatos in colotomic layering are used to put the cellular units together. This chapter will investigate how Chin's ostinatos, or melodic cells, resemble closely the cyclic and modal units that are ubiquitous in gamelan music, followed by introduction of gamelan music in general.

Gamelan has indeed fascinated many Western composers before Unsuk Chin, ever since the first performance of gamelan in the Western hemisphere in 1889 at the Grand Universal Exhibition in Paris left an indelible impression on Debussy.² What attracted Debussy to gamelan, especially Javanese gamelan, was its music being "distant in time and space"³ and "what results from a multiplicity of simultaneous lines."⁴ To Debussy, Javanese gamelan, like the sixteenth-century music of Bach, possessed "rather than the emotive power of a single line, as in a melody, ... lines in relationship to other lines and in constant metamorphosis."⁵ Such an understanding of a new concept of time and simultaneous lines in gamelan construction has led Chin to invest in recreating multiple lines of ostinato woven together as main musical material.

² Debussy, who was in the audience, wrote: "There were, and there still are, despite the evils of civilization, some delightful native peoples for whom music is as natural as breathing. Their conservatoire is the eternal rhythm of the sea, the wind among the leaves and the thousand sounds of nature which they understand without consulting an arbitrary treatise.... Yet Javanese music is based on a type of counterpoint by comparison with which that of Palestrina is child's play. And if we listen without European prejudice to the charm of their percussion we must confess that our percussion is like primitive noises at a country fair." Edward Lockspeiser *Debussy: his life and mind* V.I Cambridge University Press, London, 1962: 115.

³ Caroline Potter, "Debussy and nature" *The Cambridge Companion to Debussy*, edited by Simon Trezise, Cambridge University Press, 2003: 139.

⁴ Ibid. 144.

⁵ Ibid.

Messiaen, another composer who was influenced by the East, belonged to a group of composers whose interest in gamelan originated from a longing for time as static or circular, or in other words, transcending time.⁶ Messiaen's use of gamelan elements was not subtle or elusive at all, and in a work like the gigantic *Turangalîla-Symphonie* he even refers to part of the sizeable percussion section as a 'gamelang.' Messiaen's practice foreshadows Chin's construction of the percussion section of the orchestra to directly imitate the metallic gamelan sonority in the pieces such as *Piano Concerto* and *Double Concerto*. In *Violin Concerto*, the composer begins the piece with marimbas and steel pans to evoke the sound of a bamboo gamelan ensemble called *jegog*.

There is a lineage of Western composers who have been inspired by the gamelan sonority throughout the twentieth century as possible influences on Chin's predilection for gamelan aesthetics as well as specific technical details. Benjamin Britten later attempted the most apparent imitation of the Balinese gamelan in his ballet *The Prince of the Pagodas*. Britten wanted to imitate the gamelan for a special effect, and the result, scored for a more or less standard orchestra, is so successful that one is almost deceived into thinking that it really *is* a gamelan. The next group of composers who embraced the principles and the sound world of gamelan include Lou Harrison, Colin McPhee, Ligeti and Steve Reich. Colin McPhee's ground-breaking work on the history and technique of Balinese gamelan, *Music in Bali*, offers basic understanding of gamelan music that is crucial in deciphering the music of Chin, who has repeatedly expressed her fascination with gamelan, and especially the modern Balinese gamelan music.

To annotate the composer's on-going interest in gamelan, I include the next conversation which took place in Los Angeles with the writer in 1999 during which

⁶ Paul Griffith. *Olivier Messiaen and the Music of Time* (Cornell University Press, 1985) 26.

Chin expressed her strong interest in not only Balinese gamelan but also learning the Indonesian language. Again, in a 2006 interview, Chin made another remark on the subject of Balinese gamelan: “[my] visit to Bali and watching a shadow puppet performance called *wayang kulit*, proved to be the most emotional and overwhelming musical experiences of [my] life”. She described *wayang kulit* as “abstract” as Western classical music, for example, the music of Mozart, in its intricate construction and sudden shift of musical narrative. The difference is that Balinese gamelan achieves complex construction with the simplest musical patterns. The fascination of the folk musical idiom in Bali and her subsequent borrowing of the material from the Balinese gamelan are supported by her own remark: “unlike referencing the other [Western classical] composers’ footsteps, referencing folk music opens a wide opportunity to be adopted into a composer’s own, new language as folk music is so easily translated into something yet more authentic and unique.”

To explain how Chin adopts the folk music into particular techniques in her music, and to understand how gamelan influences the composer’s micro-rhythmic construction, I devote the next paragraphs to describe various facets of Balinese gamelan. The discussion of the properties of gamelan music in general is based on scholarship by McPhee and Tenzer. The *New Grove Dictionary of Music* 1979 defines the general term *gamelan* as a “stratified bronze gong-chime ensemble,” prevalent in island Southeast Asia. In comparison to its Javanese counterpart, gamelan in Bali is characterized by “exuberance, dramatic start and stops, dynamic contrasts, rhythmic complexity and overt group virtuosity.”⁷ While Javanese gamelan tends to be softer, dreamy and hypnotic in nature, Balinese gamelan is often much louder and more flamboyant and dramatic—although it includes quieter, contemplative pieces as

⁷ Neil Sorrell, *A Guide to the Gamelan* London, Faber and Faber, 1990:21.

well. Mostly using the *slendro* tuning system,⁸ Balinese gamelan music often is associated with *wayang kulit*, an accompanying music for shadow puppet theater. The accompaniment is provided on a quartet of *genders* (described below), called *gender wayang*. Whereas Javanese *gender* is played with padded mallets and gives a soft, mellow sound, the Balinese *gender wayang* are struck with ‘naked’ wooden mallets, producing a louder and brighter sound.⁹

Colin McPhee categorizes gongs, metallophones, cymbals and drums as the main components of the kebyar style.¹⁰ One group of gongs (e.g. *gong lanang*, *gong wadon*, *bende*, *kempur*, *kempli*, *kelenang*) in the gamelan ensemble have a punctuating role: to demarcate the ends of the melodic phrases, or emphasize key structural points within a melody, or in other words, to play a colotomic function. Another group of gongs (e.g. *réong*, *trompong*) provide an elaborating rather than colotomic function. In the kebyar style, the *réong*, usually in a set of twelve horizontally mounted knobbed gongs played by four musicians, strikes a set of eight tones spanning over two octaves in the mid-to-upper register.

Metallophones are two groups of instruments: the *saron/gangsa* group, and the *gender* group. Metallophones play in the lower octaves the nuclear melody in its most basic form, while those in the upper octaves play repeated notes or embellish the

⁸ Gamelan tunings vary greatly, but generally, they are categorized as either *slendro* or *pelog*. Intervallic structure and numbers of tones delineate the scales; an oversimplified conception might be that an abstract *slendro* divides the octave into five tones with no “half-steps,” while an abstract *pelog* has seven tones with two half-steps. While *slendro* is known as an “anhemitonic pentatonic tuning, with only five named degrees of the scale,” *pelog* is “a heptatonic tuning of seven named degrees of the scale.” *Slendro* leans towards being an equidistant pentatonic scale. *Pelog* is similar to the diatonic scale. Various tuning of both scales are employed in different gamelan, however.

⁹ Balinese music scholarship has only become more creative and substantive within the last twenty years. Composer Colin McPhee’s research remains the most comprehensive encyclopedic source for Balinese music. His 1966 book *Music in Bali* (researched during the 1930s) is the classic text on the music and musical instruments, as well as the role of music in Balinese culture. Michael Tenzer’s 1991 *Balinese Music* is a more contemporary introduction to the music, bringing various genres to life with vivid descriptions of social and cultural traditions. Tenzer’s (2000) more recent book on *gamelan gong kebyar*, a contemporary *pelog* ensemble known for its fiery and dynamic performance style, presents a thorough analysis of the genre.

¹⁰ Colin McPhee, *Music in Bali*, Yale University Press, 1966:27.

nuclear melody. The *gender* family are smaller metal bars and therefore play higher and more complex patterns than the *saron* group. Metallophones are also divided in their role: colotomic or ornamental.

There are up to six or seven pairs of cymbals (*chengcheng*, *rinchik*) in different sizes. Each player performs his own rhythmic pattern to create the complex polyrhythmic cymbal texture so unique to Balinese gamelan. Drums provide a role similar to drums in the Western orchestra, leading the ensemble, controlling both tempo and dynamics.

While Balinese gamelan can be reduced to four main instrumental groups – those that are assigned the melody, in both its basic and extended form; those that perform figuration; those that can be classified as colotomic or punctuating instruments; and the drums, in their conducting role – Chin’s rhythmic devices especially concern the nuclear tones and the colotomic function as their primary source. Let us therefore explore the concept and technique of nuclear tones (*pokok gending*), and colotomic structure. *Pokok gending* are the root tones, or the notes of the nuclear melody that make up the musical nucleus of the work – the melody from which all other melodic elements are derived. McPhee writes that in “the complex weaving of the different parts, a gamelan composition is essentially monolinear. It is in principle a number of variations on a basic theme, occurring simultaneously at different pitch levels. All can be referred to a simple melodic base...”¹¹ While the melodic base is in its basic form and therefore played by low/middle-register gongs, higher-register gongs double these melodic base at a rate of two ornamental tones to one *pokok* tone (on average). On top of the *pokok* layer, the *trompong* performer expands “the nuclear melody into full melody with a range of two to three octaves” by

¹¹ Colin McPhee, “The Five-Tone Gamelan Music of Bali,” *Musical Quarterly*, v.35, no.2 (April 1949) 260.

elaborating the *pokok* tones. The *Trompong* part can freely interpret the nuclear melody with spontaneous rhythmic and melodic liberty.¹² The following example shows how elaborate *trompong* rhythm can be. The first *trompong* line has the following rhythmic pattern against the square half-note pattern in the *pokok* part:

$$3/8 + 3/8 + 3/8 ; 2/8 + 3/8 + 3/8 ; 2/8 + 3/8 + 3/8 ; 2/8 + 2/8 + 2/8 + 1/8$$

$$(9/8) \quad + \quad (8/8) \quad + \quad (8/8) \quad + \quad (7/8)$$



Figure 2.1 Closing section to *gending Tembung*,¹³ a short composition in one movement

The *Trompong* player's counter-rhythmic conflict with the *pokok* player's square beat pattern, as shown in the figure 2.1, gives the Balinese gamelan its characteristic vitality and drive. If divided regularly, the eight-beat unit offers little rhythmic variety. But it becomes a vital rhythmic source when divided irregularly. This asymmetrical division lies at the heart of Balinese rhythm, offering endless possibilities as to the germinal rhythmic unit.

¹² William C. Bradbury II, *Messiaen and Gamelan: An Analysis of Gamelan in the Turangalila-symphonie* (Cornell University, 1991) 18.

¹³ Colin McPhee, *Music in Bali*, 72

Chin's ostinato patterns utilize the particular counter-rhythmic conflict characteristic in *trompong* rhythmic figuration. Following is the opening of Chin's *Double Concerto* and its rhythmic map, brought out by the accents.

The musical score for the opening of *Double Concerto* is presented in four staves. The top staff is for 3 Becken (cymbals) on a stand, marked *pp* and ** Tremolo: Mollkugel in 1/32 Rhythmus*. The second staff is for HH. (hand drums), marked *AB CDEFG#*. The third staff is for 6/8 Becken (cymbals) on a stand, marked *pp* and ** Vib. mit relativ harten Schlegeln wie wenig oder gar nicht im Bereich metallischer Klänge zu existieren. Der gesamte Schlagausgang muß jedoch mit dem Klavierklang verschmelzen sein.*. The bottom staff is for Solo Klav. (solo piano), marked *pp*. The score is in 3/4 time and consists of five measures.

Figure 2.2 Opening of *Double Concerto*

Bar No.	1			2			3			4			5		
Beat No.	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
♩ x	5			3			5			3			3		
♩ x	9	7		5	4	7	5	3		9	7	5	4	7	

Figure 2.3 Rhythmic map of the first five bars, *Double Concerto*

First of all, the score shown in Figure 2.2. exhibits the steady quarter to be its basic organizing unit dictated by the 3/4 meter. The quarter-note dominance is

emphasized by the steady quintuplet division of each quarter beat. Against the quintuplet sixteenths played by the solo percussionist's vibraphone part and the solo piano part, the orchestral percussionist plays a recurring accent pattern of 5/4 and 3/4, together forming an even-numbered 8/4, creating an asymmetrical division to the triple meter. The suspended cymbal's [5-3] cycle is also doubled by the rolling chords played by the piano. (Figure 2.3) The even-number division is further reinforced by the cowbell (6 herdenglocken in Figure 2.2) pattern, which subdivides the quintuplet sixteenths into a [9-7-5-4-7-5-3] cycle, lining up with the quarter-beat [5-3] cycle. This excerpt demonstrates the counter-rhythmic device of *trompong* taken to a new level of complexity. The asymmetry of triple versus duple division, added to a further, uneven division cycle of [9-7-5-4-7-5-3], creates a rhythmic vitality and a forward drive.

The complex 'layering' of rhythm groupings in Chin's music in the above example takes us to the next concept among gamelan principles called 'colotomic structure.' The term colotomic structure describes the periodic gong strokes underlying the phrase structure of both Javanese and Balinese gamelan. Colotomic structure, or a regulated cyclic pattern of gong tones, is formally defined by Hood (1979) as "the colotomy or phrase division, marking the formal structure by percussive interpunctuation of the nuclear melody." For example, a section of gamelan music might begin and end with a large gong, with internal subdivisions of the melody at a quarter, half, and three-quarters of the way through. Small and medium gongs would articulate the internal subdivisions. McPhee's chart might clarify this structure graphically. If there are three gongs, smallest to largest, the "stress weights" are: *kempli* (k)- light, *kempur* (P)-medium, and *gong ageng* (G)-heavy. The standard formula for the colotomic progression is:

P k P G P k P G

The *kempli* (light) beats fall on every second, fourth or eight *pokok* tone in shorter melodic forms, and on every sixteenth beat in the longer, more developed pieces. On the other hand, *kempur* (medium) tones are played halfway between the strokes of the *kempli*. Therefore, the *kempur* creates a syncopated feeling against the steady beat of the *kempli*. In some shorter pieces, the first one or possibly the two *kempur* tones are left out; this forms the somewhat lopsided rhythmic structure¹⁴:

. k . G P k P G

Figure 2.2 demonstrates how the concept of the “steady, primary beat” in one rhythmic layer stratified with “a strong secondary accentuation”¹⁵ layer in the *Double Concerto* follows the colotomic principle almost literally. It is none other than a logical extension of “phrase division, marking the formal structure by percussive interpunctuation of the nuclear melody,” realized in the creative composer’s hands.

Before further investigating the complex rhythmic interweaving in *Double Concerto*, a look into the basic “nuclear melodic” construction in gamelan is necessary. Gamelan melodies are characterized by cyclic ostinatos made up of small nuclei. An example of the simplest level is seen in Balinese *angklung*. Although the melodic scale of various gamelans may have from three to seven notes, with a gamut of up to two octaves, the *angklung* gamelan (a traditional village gamelan in Bali), is distinguished by a scale of only four tones, roughly equivalent to the Western *do, re, mi* and *sol*.¹⁶ McPhee (1966) provides a pertinent illustration of the *angklung* ostinato

¹⁴ Bradbury II, 24.

¹⁵ McPhee, *Music in Bali*, 85.

¹⁶ The *do* ranges from roughly G to Bb. The fifth between *do* and *sol* is a bit wider than a perfect fifth.

principle called *kotekan*, by illustrating the Western notation of the *angklung* played on Balinese gamelan instruments. *Kotekan* is a style of playing fast interlocking parts in the manner of hocket, in which two or more performers alternate playing notes, or more complicated rhythmic patterns. For the purpose of pairing *kotekan*-style ostinato patterns to Chin's adoption of the *kotekan* principle, I am including a particular example of McPhee's notation of the *réong* (small gongs) pattern. In its practice, an interdependent pair of performers executes unbroken chain of ornamental tones in the *réongan* figuration. Often limited to a series of four to five tones, the *réongan* players each control small gongs, in this case two, mounted in a horizontal row as shown below:



Figure 2.4¹⁷

Within the narrow frame of the four tones, a constantly changing figuration is produced, deriving from a closely coordinated rhythmic interplay. McPhee shows that through the irregular alternation of right and left hands, the two players create two separate voices that lock in essentially opposing rhythms to create a single, continuous stream of figuration. The basic system for the *réongan* is shown in the following example.¹⁸ The composite pattern in the last staff is especially pertinent to the comparison in the example of Chin's ostinato patterns.

¹⁷ Colin McPhee, *Music in Bali*, 75-77.

¹⁸ Ibid.



Figure 2.5 *Réong* interplay

The two parts composing the *réongan* move not only in opposing rhythms but also in essentially contrary motion. When combined, the two parts create a pattern in which an equal distribution of four-note nuclear pitch material is guaranteed every cycle. Therefore, the core of the idiom can be summarized as in the following example:



Figure 2.6 Isolated *réong* pattern

The next example shows the actual figuration in which the above pattern is spread out in elaborated sixteenth notes. This way, an equal balance in the interplay of the upper and lower voices is preserved throughout. Through contrary motion and the use of inversion, the ostinato produces a continuous variation at every cycle with a set of limited pitch collection as shown in the following example:

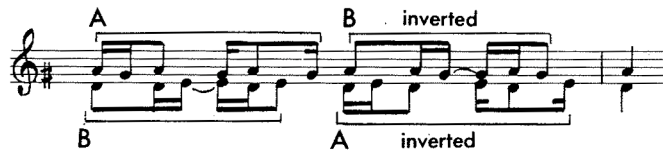


Figure 2.7

Unsur Chin demonstrates an intimate knowledge and fondness for the principles of *réongan* patterns in her construction of ostinatos, the musical material opening all three recent concertos. The following two examples, taken from the opening measures of *Violin Concerto* and *Double Concerto*, demonstrate the similarity with the *réongan* pattern in the example above:







Figure 2.8 Opening marimba parts of *Violin Concerto*



Figure 2.9 Opening piano part of *Double Concerto*

Now, a closer look at Figure 2.8 will reveal multifarious connections between the composer's material and the gamelan principle. The striking resemblance is apparent first of all in the set of limited pitch material Chin utilizes in the opening ostinato sequence, especially in the *Violin Concerto*. Just as the *réongan* pattern in Figure 2.4 limits the pitch material to [D, E, G#, A], Chin's set of pitches is limited to four notes [D, E, G, A]. The *kotekan* interlocking principle shown in the *réong* pattern in Figure 2.7 is closely reflected in the pitch distribution in Chin's ostinatos through contrasting motion and layering of opposing rhythm. Each marimba part continues its ostinato pattern that is made up of contrasting motion within the given pitch parameter. Noteworthy is the rhythmic interlocking between the two marimba parts, which produces an interesting lilt, differentiated from the steady sixteenth beat pattern in the *réongan* ostinatos. Unlike the steady sixteenth notes in the *réongan*, Chin introduces five fractional beats using quintuplet sixteenths. The quintuplet subdivision of quarter beats is in fact one of the composer's favorite local rhythmic features as they appear in multiples pieces. With its retrogradable quality, the device furnishes an added layer of subdivision rhythm, compared to its gamelan counterpart, as shown in the figure below:

(Beat number)	B :	1	2	
Pattern I (marimba 1) :				$= [\text{eighth note} \times 4 \quad 1 \quad 1 \quad 4]$
+				
Pattern I' (marimba 2) :				$= [\text{eighth note} \times 1 \quad 4 \quad 4 \quad 1]$







<div style="text-align: center;">   </div>
Pattern II (composite rhythm)     $= [\text{eighth note} \times 1 \quad 3 \quad 1 \quad 1 \quad 3 \quad 1]$

Figure 2.10 Ostinato rhythm in the opening marimba parts of *Violin Concerto*

An uneven subdivision of each quarter beat [1,4] – where the basic unit is a quintuplet sixteenth – is followed by its retrograded rhythm [4,1]. And this pattern is reversed in the other marimba part, such that the first marimba part is offset by a quarter beat from the other. In this way, Chin creates a new composite pattern [1,3,1] in a continuous chain. Besides its retrogradable quality and its asymmetry, quintuplet subdivisions are potent with a variety of syncopation possibilities compared to even-numbered divisions in the even-numbered patterns in the gamelan ostinatos.

While the composite [1,3,1] continues on, the importance of the individual rhythm [4,1] is not lost. The [4,1] pattern is replicated in the solo violin part, only at a higher structural level. Keeping the proportion [4,1] steady, the violin plays a continuous chain of [8,2] rhythm as shown in the following example and figure:

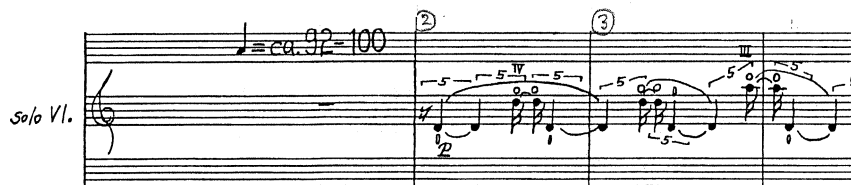


Figure 2.11 Opening violin part of *Violin Concerto*, mm. 2-3

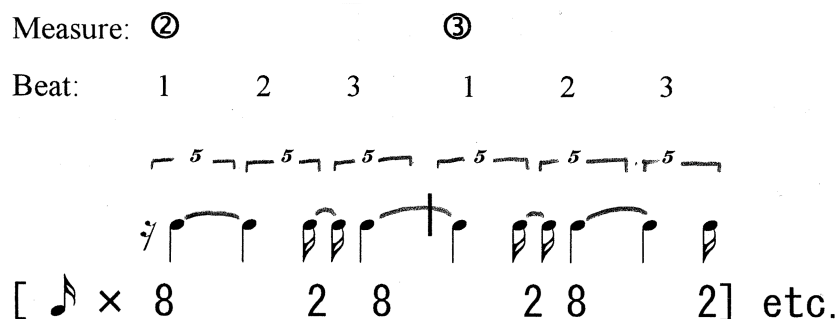
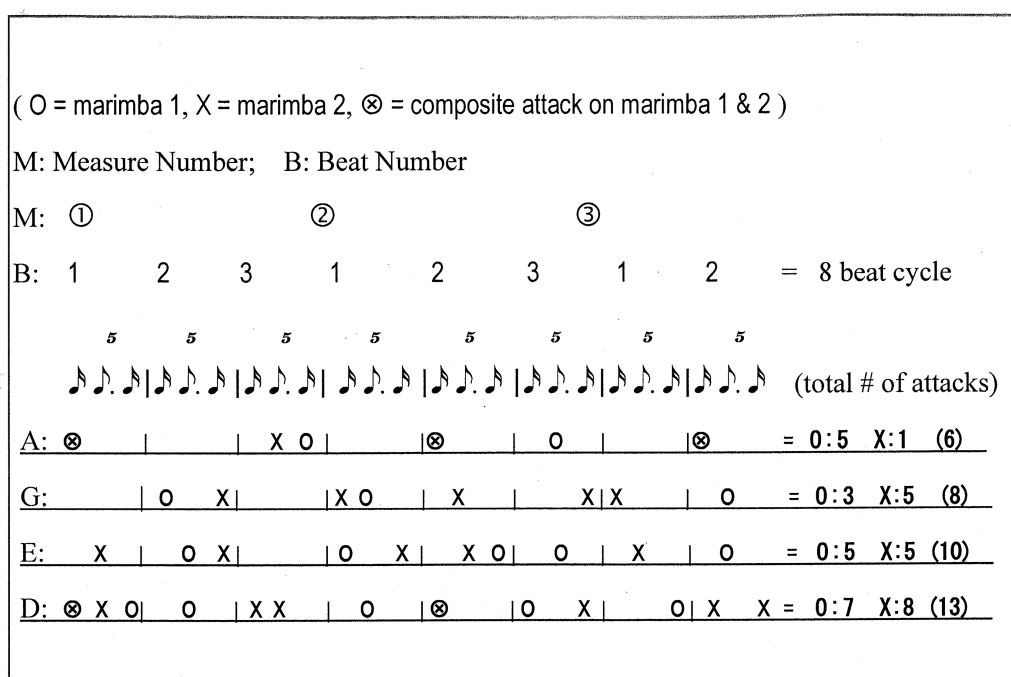


Figure 2.12 Rhythmic reduction

The layering of [8,2] on top of [4,1] is strongly reminiscent of the colotomic principle, where the structurally higher, or weightier, gong punctuates at cyclic points, usually at double the time of the lower, or lighter gong. In Chin's example, the solo violin, at structurally higher level, plays the rhythmic values of the marimba doubled, at structurally lower level. Nevertheless, although the colotomic structure and the *kotekan* interlocking pattern of *réongan* ostinato are apparent, the symmetrical construction of gamelan is again violated. The eight-beat cycle in triple meter echoes exactly the counter-rhythmic layering shown in *Double Concerto*, as demonstrated in Figure 2.3.

Additionally, the violin's cycle does not line up cleanly with the marimba parts, as would be expected in gamelan. While the marimba parts are laid out to play the same pattern every eight beats in the opening of the piece, the violin part does not start a new cycle at the same time as the marimbas. Instead, the violin continues its insistent pattern of [8,2], lining up only with the end of the third cycle of the marimba parts. In this way, the first violin section lasts for eight measures, lining up with three marimba cycles. The juxtaposition of eight-beat cycles (marimba) and an eight-measure cycle (solo violin) create a distinct cyclic property, although there are abundant elements of asymmetry built in within the relatively short opening.



(* This 8-beat cycle repeats three times before a change of pitch pattern occurs.)

Figure 2.13 Pitch distribution pattern in one complete cycle as played by the marimbas in *Violin Concerto*

While the cyclic property of gamelan music is present in Chin's weaving pattern, the equal distribution of the pitch material in gamelan is also set free. In the *Violin Concerto*, the pitch pattern is designed so that D is given a definite weight over the other three pitches in the marimbas' four-note ostinatos. The above figure (2.13) shows the rhythmic and pitch pattern played by the two marimbas.

In one cycle of the marimbas' composite ostinato pattern, the number of attacks on each pitch from [D, E, G, A] is unequally distributed. D, which is attacked thirteen times, becomes the pitch center against the E, G, and A, which are attacked ten, eight, and six times, respectively, in one cycle. The harmonic centricity of the pitch D points to the composer's fluid traveling between gamelan technique and the Western tradition.

A further pitch deployment scheme also places Chin in the hybrid world of gamelan and the Western modernist tradition in her *Double Concerto*. In the opening of the score, Chin establishes a strong pitch center of E against the other pitches evenly spread out among the entire collection of twelve tones. The following chart shows the pitch distribution pattern of the first five beats. While the two pitches, [C, A#] are emphasized by the vibraphone, the composite pattern covers the entire twelve-note collection in the piano. Some pitches, for example, [A, B], adjacent to the central tone [A#], are visited less frequently compared to the rest of the twelve-note collection. However, given the fast tempo and the resultant frequency of each cycle, chromaticism of the overall harmonic language is undeniably clear:

the pitch centricity of E is actually the tone color: the composer asks for prepared piano where only the pitch E would ring longer with regular resonance of the piano, while all other eleven notes would sound brittle and with less echo. The tuned cowbell and the vibraphone insistently emphasize the A# and C, which are part of the same whole-tone collection as the E.¹⁹ Therefore one can conclude that, while the overall metallic sonority, the driving rhythm and the ostinato construction device in *Double Concerto* draw a strong connection to gamelan technique, the pitch information is pointing to the complex system of twelve-tone technique and pitch centricity.

We have so far looked at the melodic and rhythmic construction of gamelan, its colotomic structure and their presence in Chin's musical materials. The characteristics mentioned so far provide the foundation for the cyclic and recurring quality in both gamelan and Chin's music. In *Violin Concerto*, the recurring ostinatos are used to create a soft, dream-like texture,²⁰ whereas the ostinatos in *Double Concerto* create a vibrant, insistent forward drive. The distinct metallic sonority and its driving rhythm of *Double Concerto* draw closely from the characteristic bright and exuberant Balinese gamelan, especially the *gender wayang* ensemble. *Gender wayang* provides the accompanying music to the shadow puppet play called *wayang kulit*, which is considered one of the most difficult ensembles to play because it calls for a high degree of technical skill and rhythmic coordination. The performers are to "both think and feel contrapuntally, for his right and left hands perform entirely different parts most of the time."²¹ The following example shows the independence of the two hands:

¹⁹ The composer has stated that *Double Concerto*'s harmonic foundation lies in the contrasting two whole-tone collections: [C,D,E,F#,G#,A#] and [C#, D#, F, G, A, B].

²⁰ The composer states that this particular texture was inspired by jegog gamelan, or the bamboo gamelan in the western region of Bali. jegog has a mellow and softer texture compared to the metallic ensemble more common in the overall Balinese gamelan orchestra.

²¹ McPhee, *Music in Bali*, 202.

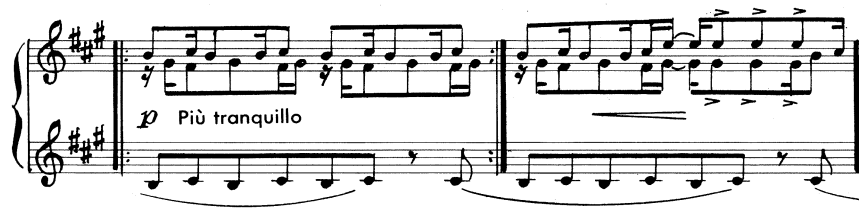


Figure 2.15 Pemungkah; conclusion of opening section²²

In the *gender wayang* excerpt above, the upper staff is played by the right hand, and the lower by the left. The level of its rhythmic complexity is translated in both the solo pianist (see Figure 2.9) and the solo percussionist part (next example) in *Double Concerto*:



Figure 2.16 Solo percussionist part, opening of *Double Concerto*

Another characteristic of the *gender wayang* ensemble is the added layer of rhythm created as the *dalang* – puppeteer, narrator, and leader of the music - hits the wooden box with a mallet to cue when to speed up or slow down. While the *gender wayang* ensemble is made up of fewer players than the usual gamelan orchestra– about four, the *kotekan* (interlocking) patterns are still performed with utmost precision even without gongs or drums to furnish a rhythmic background. With the *dalang*'s lead, shadow puppet theatre music can be more versatile in tempo and dynamics, and even

²² Ibid. 207

tonal shifts. Chin has mentioned this versatility of *gender wayang* to be memorable from her trips to Bali. The brittle sound of the prepared piano and the lilting layer of rhythm amidst the restless ostinatos seem close to the inspiration she gained from *gender wayang*.

Sudden shifts in tempo, dynamic, and the turn of musical events are also characteristic of the Balinese gamelan (unlike its Javanese counterpart). For example, *gong kebyar*, a more recent style of Balinese gamelan, is widely known for its explosive texture and clangorous rhythm.²³ Michael Tenzer describes the sound of *gong kebyar* to be “complex but accessible from various angles.”²⁴ “The construction of the instruments, their tuning, jarring discontinuities of dynamic and tempo, and the conventions of orchestration”²⁵: these seem to describe not only *kebyar* but Chin as well. The word *kebyar*, from which it derives, means to flare up suddenly or to burst open. Byar is actually a *tutti sforzando* in which all of the bronze-keyed metallophones play the same scale tone, each in its special register, so that together the more than four octaves of the gamelan’s tuned gamut are spanned. The largest hanging gong, the cymbals, and a deep-pitched drum are sounded too, blending with the *réong* and metallophones to produce a sonority that can extend for more than five octaves—from the deepest gong to the smallest, highest metallophones and farther if the prominent upper partials are counted in.

Toward the end of the first movement of Chin’s *Violin Concerto* comes a sudden shift in the musical texture, with a burst of clangorous metallic ensemble in the percussion section. The section leading up to m.186 has been in 3/4 meter with basic rhythmic activity utilizing asymmetrical subdivision of quintuplet sixteenth notes. In terms of the musical textures, the orchestra was divided into choirs where each section

²³ McPhee, *Music in Bali*, 328-29.

²⁴ Michael Tenzer, *Gamelan Gong Kebyar* (2000) 22.

²⁵ *Ibid.* 25.

was assigned a distinct rhythmic and timbral quality. The superimposition of these layers, resulting in a web of intricate counterpoint of textures and rhythm, provided various levels of density and gave the composer a tool to increase, or decrease, the overall tension of the narrative. Additionally, subdivision of quintuplets and lilting accent patterns provided rhythmic interest and a momentum in a long-sustained section of intricate ostinatos.

The music at measure 187, however, after the solo violin's cadenza, takes an abrupt change to 5/8 meter and presents a much fewer layers of materials. In this section, the momentum increases greatly, not by the density of layers, but by the faster tempo, unified and focused timbre and, most of all, by the abrupt break in the pattern from the entire music leading up to this point. The new basic rhythmic unit at this point is sixteenth note in the solo violin while all sixteenth notes are equally accented as the soloist does not leave the low register. The new homophonic texture in the orchestral accompaniment against the solo violin's line also provides a new sonority as shown in the following example:

1/28

185 $\text{♩} = \text{ca. } 76-80$

Picc. Fl. Ob. 1 Klar. 1 in B Klar. 2 in B Fag. K. Fag. Hr. 1 in F Hr. 2 in F Trp. 1 Trp. 2 Tuba Stein-spiel G. Spiel Gong-grammel Becken (H) 3 Becken Hf. 1 Hf. 2 Solo Vl. I. VI. II. VI. Bra. V.C. K.B.

poco *a poco* *cresc.* *con sord. (messa)* *Cencerros* *Xyl.*

5 8

185 $\text{♩} = \text{ca. } 76-80$

Figure 2.17 First movement of *Violin Concerto*, mm.182-194

Figure 2.17 continued

190

Picc.
 Fl.
 Ob.
 Klar. in B
 Fag.
 K. Fag.
 Hr. 1
 Hr. 2
 Trp. 1
 Trp. 2
 Pos. 1
 Pos. 2
 Tuba
 Perc.
 Cym.
 Xyl.
 Gong-
 tom-tom
 3 Becken
 Harp. 1
 Harp. 2
 Solo Vl.
 Vl. I
 Vl. II
 Vla.
 Vcl.
 K.B.

190
 191
 192
 193
 194

sul pont.
sul pont. dir.
sul pont.
arco
sul pont.
arco
sul pont.
arco

f
mf
p
sfz
acc
stacc

Against the violin's fast and insistent sixteenth notes, the percussion ensemble introduces a metallic accompaniment in dotted eighth rhythm. In this example, pitched cowbells, xylophone, steel drum and two harps make up a percussion unit. The octave doubling within the percussion ensemble is quadrupled by the punctuations added by the entire orchestra playing *marcato*. The sudden registral expansion augments the dramatic effect of the textural, rhythmic, and timbral shift. This type of volatility portrays a characteristic difference in Chin's music from minimalist music that also takes its source concept from the cyclic and recurring music of gamelan.

That the composer takes her timbral cues from gamelan is apparent in her choice of instruments. All three pieces being discussed in this chapter— *Double Concerto*, *Violin Concerto* and *Cantatrix Sopranica*— exhibit bell-heavy orchestration while musical nuclei are often made up of percussion ostinatos. Chin's unusual, or 'rarified,' sonority is indeed often achieved with the aid of a sizeable percussion section. This is not to say that Chin relies solely on the percussion department for timbral innovation. According to interviews with the writer, she searches for unusual timbres from traditional instruments. The beginning of the solo violin part of *Violin Concerto*, almost entirely made up of harmonics, is one example. In the current chapter, however, the writer intends to focus on the exclusive relationship between gamelan music and its influence on Chin's music.

Although she has been known for her economic use of the orchestra,²⁶ her *Double Concerto*, for example, calls for no fewer than 20 percussion instruments, while the solo piano and the solo percussion also act as percussion instruments. On

²⁶ Chin is not in favor of the large set-up for the orchestra. Most of her orchestra pieces call for minimum size string, wind and brass sections. In a comment on June 15, 2005, she noted that the big orchestra sound is too reminiscent of European Romanticism and comes with a certain 'baggage' of tradition not necessarily pertinent to the contemporary sound.

closer look, the percussion instruments required for *Double Concerto* are mostly from the metal family, rather than wood or skin, as if to recreate the gamelan ensemble that is predominantly made up of bronze gongs. Looking at the percussion set-up of *Double Concerto* illustrates the composer's intention of creating her own 'gamelan' section within the Western orchestra. The solo percussion is asked to play on vibraphone, xylophone, marimba, six cowbells, *cencerros* (pitched cowbells), tubular bells, Japanese temple bells, and handbells in addition to tenor drum, tenor tom-toms, and timpani. The orchestra percussionist adds to this lengthy list even more bells: glockenspiel, lithophone,²⁷ antique cymbal, five Javanese gongs, six musical glasses, four metal blocks, hand bells, triangle, three clash cymbals, three tam-tams, two temple blocks, claves, tambourine in addition to timbales, snare drum and bass drum as skins.

In addition to the two percussionists, Chin adds another crucial percussion instrument: piano. Unlike the tuneful, even glamorous, leading melodic role the piano plays in the traditional piano concerto repertoires, the piano soloist behaves like a member of a percussion trio. Even from the beginning of the piece, the piano is often treated as if it were a virtuoso mallet percussion equipped with an 88-note-range. Chin's instruction for the percussion soloist in the opening confirms the unity she wants between the two soloists as one sound family: "To obtain a bit brittle sound on the vibraphone, use hard mallets which would give metallic sound. The entire percussion part must merge together with the piano." The 'prepared' piano further imitates the percussive tone color of the gamelan instruments.²⁸ In this case, the board pins and hooks are entwined only on selected strings inside the piano. The composer

²⁷ A type of stone chime.

²⁸ Preparations for the piano are typically nuts, bolts and pieces of rubber to be lodged between and entwined around the strings. Some preparations make more dull and brittle sounds than usual, while others create sonorous bell-like tones. Other prepared piano sounds can be reminiscent of *mbiras*, marimbas, bells, woodblocks, and gamelan instruments, etc.

achieves in effect two goals through such a set-up: an added percussion instrument, and an added rhythmic layer, or pattern, by obtaining a cyclic return to the idiosyncratic, ‘prepared’ sonority of the piano. *Double Concerto* opens with ostinato patterns played by all three ‘percussionists’ at an extremely fast pace, establishing immediately a unique tone color that is strongly reminiscent of the dynamic *angklung* ensemble of Balinese gamelan.

The *Violin Concerto* asks for five percussionists to play on ‘bell choir’ not so much smaller than in her *Double Concerto*: glockenspiel, two vibraphones, xylophone, two marimbas, lithophone, antique cymbal, tubular bells, cow bells, triangle, three suspended cymbals, large thunder sheet, metal block, Javanese gong in D, steel drums, claves, zanza,²⁹ two harps, in additions to timpani, bass drum, small tambourine, snare drum.

The score for *Cantatrix Sopranica* calls for two percussion players: glockenspiel, vibraphone, tubular chimes, crotales, xylophone, marimbaphone, bass marimbaphone, *cencerros*, triangle, two cymbals, tam-tam, Chinese cymbal, seven pitched-gongs, tambourine, two bongos, two tom-toms, snare drum, tenor drum, bass drum, metal rattle, sistrum, maracas, sand blocks, fruits shells, sandbox, glass wind chime, two bottles, two metal blocks, four temple blocks, four wood blocks, six cow bells, six musical glasses, five musical glasses.

To place such a metallic sound world, created by a giant percussion ensemble, at the center of a Western-trained composer’s timbral design does certainly evoke traces of the East. I would like to close this chapter with a look into the broader aesthetics of Balinese gamelan and how they affect Chin’s musical narrative. First is stasis, or stillness. The gamelan’s cyclic property essentially creates a ritualistic,

²⁹ A type of *mbira*, or thumb piano.

hypnotic state rather than the directionality typical of Western art. Sorrell captures this concept: “The highest form of beauty is stillness; Gamelan music is like the raindrops falling from the trees after a shower; When you play the violin [*rebab*] it must be as if there were no violin, only a memory.”³⁰ All this sounds rather like a description of the opening of Chin’s *Violin Concerto*, as the soloist enters from a most unexpected place – a place of no distinct origin. The violin in fact plays not one single ‘composed’ tune, but rather an ostinato series of overtones on the harmonic series of D, creating an effect of a distant murmur, an undulating echo, or a mere ‘memory’ of the softappings on steel drum and marimbas before it enters the foreground. The resultant ‘dream-like’ quality³¹ resonates with Chin’s general musical goal to create a fantastical sound world, as mentioned in the previous chapter.

The fantastical dream world is also achieved through the gamelan’s differentiated tuning system, where there exists none of the tonal tension Western listeners are used to hearing. The prevalence of modal units, like the [D,E,G,A] set we have seen in the beginning of *Violin Concerto*, and even more prominently the whole-tone set in *Double Concerto*, as well as in the works before and after, can be seen as an adaption of gamelan tuning. The ‘aquatic’ quality of gamelan also influences the fluid shifts of musical narrative and texture in Chin’s music. In gamelan, there is stasis but also movement. And that irony is transparently reflected in the composer’s musical language.

³⁰ Sorrell, *A Guide to the Gamelan*

³¹ Unsuk Chin describes her music as a reflection of her dreams. About her musical inspiration in general, Chin’s publisher includes her own quote from 2003 as follows: “I try to render into music the visions of immense light and of an incredible magnificence of colours that I see in all my dreams, a play of light and colours floating through the room and at the same time forming a fluid sound sculpture. Its beauty is very abstract and remote, but it is for these very qualities that it addresses the emotions and can communicate joy and warmth.” (from Boosey and Hawkes’s website on Unsuk Chin’s profile) <http://www.boosey.com/pages/cr/composer/composer_main.asp?composerid=2754> (access date 4/15/2009)

CHAPTER 3

GROWING TIME: CONTINUOUS GROWTH TO BLOCK FORM

After investigating micro-rhythm and localized process in Unsuk Chin's music in the previous chapter, the current chapter addresses macro-rhythm and form. While repetition and ostinatos are the main procedures of local phrase rhythm, an investigation into the composer's larger structure also reveals repetition to be one of the key concepts in the development of overarching form. Repetitions on a smaller scale often function in Chin's music with an additive process: often the smallest musical nuclei have a rhythmic asymmetry or subdivision built into them so that there is a tool to accelerate a forward momentum. On a broad scale, repetition occurs as distinct returns of musical blocks as a patch of a distinct pattern finds its return elsewhere in a quilt. Because the composer favors juxtaposition of many disparate musical events, or blocks, within a piece, repetition of musical blocks functions as a tool to organize and unify the composition as a whole. In other words, not only does repetition shape the nuclear motives, it also forms a vehicle to carry forward a broader narrative in Chin's music. In the first part of this chapter, I will discuss the types of cyclic and repetitive techniques that function as a developmental vehicle in the macro structure.

The second part of this chapter deals with block form, both in its technicalities and aesthetics. Although ostinatos and repetition provide unity and development within sections of Chin's many compositions, a broader view of entire movements, or even a complete piece, often demonstrates stark juxtapositions of disparate materials. Such a tendency for mosaic or patch-work structure finds its roots in the block form, originating from Stravinsky's experiments with discontinuity in the early twentieth

century. The principle of discontinuity bore enormous consequences in the way composers thought about form after Stravinsky's time as well. Chin's formal design reflects block form and its resultant elements found in later generations, e.g. 'moment form' and moving 'spatial blocks,' or 'sound mass.' Behind the principle of discontinuity lie the composer's understanding of time and aesthetic ideas implicit in a visual, literary, theatrical, and filmic aesthetics of contemporary time. This part of the chapter will examine in detail how Chin reconciles the disparity and the coherence.

Unsub Chin's music is surfeited with ostinatos. One need only recall the densely woven quintuplet sixteenth notes in both *Violin Concerto* and *Double Concerto*, or look at the following examples from the second movement of *Cantatrix Sopranica*. The first example, shown below, is the arrival of its final climax.

The musical score for measures 98-104 of *Cantatrix Sopranica* is presented. The score includes parts for Guitar, Harp, Cymbals, Soprano 1, Soprano 2, Contralto, and Violins. The music features dense quintuplet sixteenth notes and various dynamic markings. The Guitar part is marked (raguado). The Harp part has markings for Db, ff, poco a poco, and decresc. The Cymbals part has markings for ff, f, and mf. The Soprano 1 part has markings for ff, sub mp, and a tempo change to ca. 208 (ca. 104). The Soprano 2 part has markings for ff, sub mp, and a tempo change to ca. 208 (ca. 104). The Contralto part has markings for ff, sub mp, and a tempo change to ca. 208 (ca. 104). The Violins part has markings for sul ponticello, f, and poco a poco decresc.

Figure 3.1 II. *Singing, Sing it!* mm.98-104 from *Cantatrix Sopranica*

The next example, also from *Cantatrix Sopranica*, is from the sixth movement.

The musical score is handwritten and consists of two systems. The first system covers measures 14 to 20, with measure numbers (15) and (20) circled at the top. It includes staves for Sopranos 1 and 2, and percussion instruments: musical glasses, vibraphone, pitched gongs, crotales, and 6 con bells. The vocal parts have lyrics in Chinese: Ming Yue, Di Tou Si Gu, Xiang, and Chuang Chuang. The second system covers measures 21 to 27, with measure number (25) circled at the top. It adds a guitar staff to the percussion ensemble. The vocal parts continue with lyrics: Xiang Tai Di Ming Mei Shi Yue Guang Xia Di Ming Tai Tou Shiang. The score is characterized by a high density of beamed notes, particularly in the instrumental parts, suggesting a fast, repetitive rhythmic texture.

Figure 3.2 VI. Yue Guang – Clair de Lune, mm 14-27 from *Cantatrix Sopranica*

What is salient about these two excerpts is their immediate and consistent repetition of patterns. The steady, persistent motivic cells evidently constitute the composer's basic

thread used in the “woven” texture. As discussed in the preceding chapter, the instant stylistic reference to such ostinato-surfeited music is in its static quality. The notion of stasis, which has attracted composers since the beginning of the twentieth century, does not originate only from gamelan, or Eastern influences alone.¹ Kramer explains that, as science and technology in the twentieth century disrupted the Western view of teleological time, there was no longer an implicit need to expect a strong sense of goal in a piece of music. Music in the twentieth century instead embraced fragmentation, discontinuity, non-development and/or multiplicity. The word multiplicity is reflected in the conjunctive logic in the music of Chin: the aquatic – fluid, dream-like – quality and the fastidious, machine-like quality coexist. In the temporal realm,² multiplicity is expressed when two contrasting forces – one of ‘stasis’ and the other of ‘movement’ – are simultaneously present. Movement exists amidst stasis, or repetitiveness. For example, the beginning of *Singing, Sing it!*, the second movement of *Cantatrix Sopranica*, demonstrates how the composer creates a pattern with three voices:

¹ Scholars have explained that the contemporary sense of time embraced non-teleological, or anti-temporal narrative as a result of multiple events - the arrival of modern technology, by being familiarized with the non-western culture, Einstein’s Theory of Relativity, being a few of them. Leonard Meyer explains that, in a pluralistic society, man gives up purposes and goal-oriented behavior to understand the world as it really is. (Music, The Arts, and Ideas: Patterns and Prediction in Twentieth-Century Culture: The University of Chicago Press, 1967, p.60)

To clarify the linear, goal-oriented sense of time, Jonathan Kramer uses an analogy of a train trip, as the railroad was widespread in Europe and America in the nineteenth century. A train trip gave people the means to travel from one point in time and space to another. The trip was also characterized by its clear purpose, representing constant “motion toward a foreseeable goal.” In comparison, what distinguishes the twentieth-century notion of time might be compared to a plane trip as people are far less aware of actually moving once we are in the air or in space than we are while speeding over rails. A plane trip is internally static, not *experienced* as directed motion from the point (in space and time) of origin to the point of destination. Such stasis within a framework of almost imperceptible motion is an apt symbol for contemporary time. (Jonathan Kramer, *The Time of Music*, New York: Schirmer Books, 1988)

² In the non-temporal realm, multiplicity is expressed in coexistence of multiple physical states or multiple significances: for example, humor and the grotesque, naïveté and artificiality, distance and closeness.

♩. = ca. 84

*Singers:
At the beginning, sing festively and invitingly in a childlike voice.
Should become gradually imperious (until bar 20) and aggressive (until bar 50)

Sop. 1
mf
sing-ing sing it sing it al-ways sing it sing e-very-day sing it play-ing sing sing it

Sop. 2
mf
sing it sing it e-very-day sing it al-ways play it play it a-ways sing

Counten.
mf
sing-ing sing it sing it sing it singing sing it play it al-ways

Vn. 1
mf
Vn. 2
mf
Vla.
mf
V.C.
mf

Figure 3.3 Beginning of *Singing, Sing it!* from *Cantatrix Sopranica*

In this example, a consistent texture in the vocal part is created by a rhythmic pattern made up of one to three beats where the basic unit is the eighth note. Each singer is assigned a similar pattern alternating multiple units of eighth notes and eighth rests. The duration units of each attack (underlined) with each rest (no underline) reveal following pattern:

Soprano 1: <121312211111122211111311112211>

Soprano 2: <21312222223131331213121>

Countertenor: <311311131312211113111311>

The countertenor has the most predictable pattern of repeated <311>. The three voices combined create a new composite pattern where each eighth beat is attacked, allowing us to deduce that the countertenor part was written first, after which the sopranos 1 and 2 were woven into it to create the overall density of even and regular attacks in the first four measures. Figure 3.4 shows the reduced score of the first eight bars.

The string section also has a similar process. As the full score in Figure 3.3 demonstrates, string parts show beat patterns in which the duration lasts from one to four eighth beats/rests. The rhythmic patterns of the strings are as follows:

Violin 1: <34134124131331113>

Violin 2: <3241242231231211112>

Cello: <524233123114111114>

Although each vocal and string part has distinctly its own rhythmic pattern made up of short and long moments, together, the vocal part and the string part create a rhythmic map in the first eight measures where every beat, except for one (m.7, second eighth beat), is attacked, as if in a pointillistic painting. The composite rhythm and pitch pattern is shown in the following example in Figure 3.4. The rhythmic pattern is presented in the box above the voices and below the strings:

The image displays a musical score for measures 1 through 8 of a piece titled *Cantatrix Sopranica*. The score is presented in two staves: the top staff for voices and the bottom staff for strings. Above the vocal staff, a sequence of numbers (1s and 2s) represents the composite pitch and rhythm. Below the string staff, another sequence of numbers (1s, 2s, and 3s) represents the composite pitch and rhythm. The musical notation includes notes, rests, and accidentals, with some notes marked with accents. The key signature is one sharp (F#), and the time signature is 5/8.

Figure 3.4 Composite Pitch and Rhythm, mm.1-8, *Cantatrix Sopranica*

The vocal composite rhythm has mostly one- to two-beat durations, and the string composite rhythm has two- to three-beat durations. In the string composite rhythm, observing the accent marks shows that the 5/8 meter is initially broken down into <3-2>, then quickly becomes disrupted in two-beat hemiolas in measure 3. The two-beat pairings become further broken down to combinations of various beats from one to three. This way, the initial observation of the 5/8 meter becomes quickly obliterated while the vocal and string parts create a complex hocket. Within the initial eight measures, there are layers of rhythm – one by the vocal, the other by the strings, and the last by the composite – that evolve independently as well as together. This shows that the surface pattern that seemed simple enough with limited rhythmic material has built-in momentum for fast development. The developmental scheme is also reinforced by quick expansion of the pitch material in the vocal part, which initially starts out in unison and shows diverse third relationships.

Much of the excitement of Chin's phrases derives from the driving character of their repetitions, and from an expectation for change which this character creates. How, then, do the repetitions begin and end in Chin's music? And how do the repetitions fit into the larger context of a piece? As in traditional tonal terms, development most often implies a continuity established through progressions; the

composer creates and orders musical materials so as to lead from one to another in an organic fashion. The portrayal of events as continuous and progressive is evidently an important aim in the composer's development scheme, as the materials seem to be ordered only by their individual patterns of repetition. The keyword of Chin's procedure is additive. As in the previous example, the composer sets up a pattern, e.g. <3-2> etc., then subtracts and/or adds a beat to this pattern, very much like the Stravinskian additive procedure. The additive procedure takes place on the vertical plane as well, as the composer adds layers of rhythmic pattern in the different instruments. Here is an example of further development from *Singing, Sing it!*

The image shows a handwritten musical score for the piece "Singing, Sing it!" from the opera *Cantatrix Sopranica*, measures 18-26. The score is written on multiple staves, including Guitar, Hp. (Harp), Soprano 1 (Sop. 1), Soprano 2 (Sop. 2), Contralto/Tenor (C. Tenor), Violin 1 (Vn. 1), Violin 2 (Vn. 2), Viola (Vla.), Violoncello (V.C.), and Double Bass/Contrabass (D.B.C.). The music is characterized by complex rhythmic patterns and a mix of whole, half, quarter, and eighth notes. The lyrics for the vocal parts are: "singing tuning and playing and play it singing e-very where tun- ing turn- ing all day long sing al-ways". The score includes various musical notations such as accidentals, dynamics (e.g., *secco non r.p.*), and articulation marks. There are also circled measure numbers 20 and 25. The overall style is that of a working manuscript.

Figure 3.5 *Singing, Sing it!* mm. 18-26 from *Cantatrix Sopranica*

While the voices and the upper strings continue the pattern initially established, three other layers of independent rhythmic pattern are added on top of them. The harp part adds an independent rhythmic layer from m. 19 in which the distance between attack points (DBAP, hereafter) demonstrate a regular pattern of <3415-3415-3415>. The guitar, with its staggered entry at m. 24, adds another ostinato layer in which the cycle is also regular, but the rhythmic period of DBAP is much shorter: <36-36> etc. Given the similarity of the timbre – plucked strings at a soft dynamic – in harp and guitar as well as their pitch and intervallic content, the overall effect is that the composer is simply adding density, or intensity, of the development rather than adding contrapuntal layers. Additionally, we see that the low strings, the violoncello and double bass, have been carrying yet another layer of ostinato pattern in a related staccato punctuation gesture. The low string pattern has started earlier at m.12. The DBAP of the low strings, from its initial entry at m.12 to m.35 reads: <787-787-787-787-78>.

It is noteworthy that none of the rhythmic layers – the harp pattern of <3415>, lasting 13 beats, the guitar pattern of <36>, lasting 9 beats, and the low strings' pattern of <787>, lasting 22 beats – are multiples of 5 beats as implied in 5/8 meter. As this movement features a steady time signature of which the individual rhythmic periods are independent, the layers are built so that they cannot be in a fixed alignment: rather, the opposition of strata occurs through their superimposition, rather than through their successive alternation. Thus, development is a product of the changing vertical coincidences created by the strata. An ostinato pattern that is in line with its time signature meter appears finally at m.31 in the percussion, as maracas and sandblocks together play an ostinato pattern of <141414 etc.> However, at m.36, any regularity of the rhythmic periods breaks down as the entry of each cycle becomes more frequent. This makes the overall texture even more dense, and the pent-up intensity reaches its

climax of the first section at m.45 (see example below), where the entire ensemble is participating in layers of rhythmic ostinato by the end of m.49.

Looking at the first section, or block, the uniformity of ostinato-driven texture sustains one long crescendo, literally in dynamic markings as well as figuratively in its intensity, until the density of texture is saturated at the dynamic marking of triple forte. This is an example of a persistent additive process with the rate of increase that is evenly spread out. At the end of m.50, the music reaches a point of saturation of energy and the music implodes into a sudden relaxation. The second half of the movement also follows a similar pattern as the first fifty measures. The overall shape of the movement therefore constitutes two long crescendos, with a release of tension placed in the middle. The relaxed music at m.51 slowly builds up intensity by additive processes within the consistent texture until, at m.98, another saturation of energy occurs, as was shown earlier in Figure 3.1. We can compare the consistency of ostinato textures, the build-up of rhythmic layers of Figure 3.1. to the following example in Figure 3.6:

45 50 ♩ = ca. 72

Bn. *cresc.*

Trl. *cresc.*

Ob. *cresc.*

Clar. in B \flat *cresc.*

Hn. in F *cresc.*

Trp. *con sand. (metal)* *mp*

Trb. *con sand. (metal)* *mp*

Perc. I *poco a-poco cresc.*

Perc. II *poco a-poco cresc.*

Guitar *cresc.*

Hp. *cresc.*

45 50 ♩ = ca. 72

Sop. 1 *poco a-poco cresc.*
sing it sing away play and sing sing it and sing it sing it sing e-veryday sing it sing sing sing

Sop. 2 *poco a-poco cresc.*
it sing it sing e-veryday sing singing sing away sing it sing sing sing it a-way sing it sing it sing

C-tenor *poco a-poco cresc.*
singing and sing it and singing and sing it singing e-veryday sing a-way sing it a-way sing and sing

Vn. 1 *cresc.*

Vn. 2 *cresc.*

Vla. *cresc.*

V.C. *cresc.*

D.B. *cresc.*

do not change
without motor
hand mallet

68

Figure 3.6 Singing, Sing it! mm. 45-52 from *Cantatrix Sopranica*

Concurrently, the pitch pattern also reflects the increasing intensity. For example, the initially third-dominated leaps in the soprano 1 part have evolved to a much wider major seventh interval leap by the end of this saturated ostinato section at m. 50. At the same time, compared to the initial tightly controlled pitch content [B, C, C#, D] in the vocal parts as a result of combinations of different third relationships (see Figure 3.4), by m. 50 many more pitches are in play: [C, C#, D, E, F#, G#, A#]. The consistency of the pointillistic texture in the vocal parts permits a degree of predictability in the resultant widening of the tessitura alongside the growth in the pitch material as the movement progresses. However, the economy of such a uniform, even predictable, process is juxtaposed against the complexity of strata and the virtuosity produced in the extreme registral/intervallic expansion and in the exactitude of the ‘mechanical’ transformation in the human voices, creating a heightened excitement. This is one way the composer achieves a ‘fantastic,’ or ‘imaginary,’ world where simplicity and complexity simultaneously are present.

The growth pattern in the pitch realm can take a steady and consistent pace as shown in the example of *Singing, Sing it!*, but the composer also employs more volatile shift in the pace of growth. Examining briefly an earlier work by the composer, the first sixty measures of *Violin Concerto* demonstrates that the pitch growth is methodically slow and steady, until all twelve pitches are employed at the moment of sudden eruption of the solo’s violin’s climax of the section at m.61. Compare the *réongan*-inspired four-note cell [D, E, G, A], from the previous chapter, which initiated the composite marimba parts in the first movement, to the following example at m. 55 in Figure 3.7. Subsequently, Figure 3.8 demonstrates the growth of the pitch pattern over the first sixty measures:

1
Marimba
2
Timp.
Hf. 1
Hf. 2
(50)
Solo VI.
(55)

Figure 3.7 first movement, mm.50-56, *Violin Concerto*

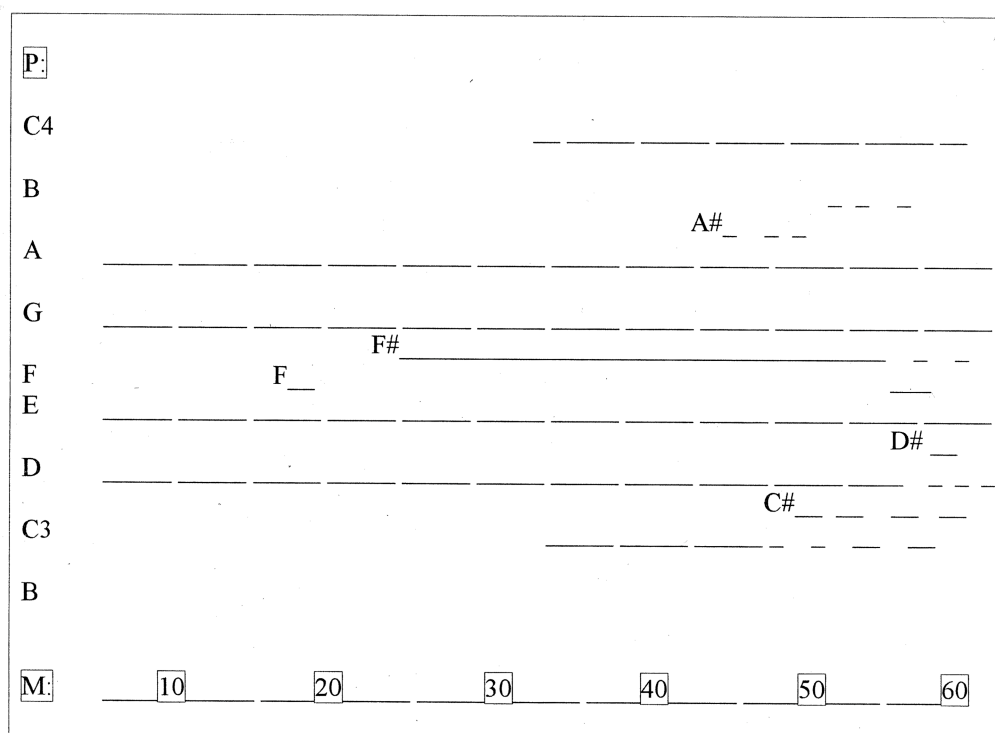


Figure 3.8 First sixty measures, *Violin Concerto* (P: pitch M: measure number)

As shown above, the composer carefully avoids expanding the initial collection [D, E, G, A] for quite some time. At m.32, the cell has added all but one more note [F#] to its original collection. However, the additive process picks up speed in the last part of this section as, at m.55, all twelve pitch classes are used in weaving the same quintuplet sixteenth pattern in the marimbas. The sudden growth in the pitch material coincides with the solo violin's activated texture utilizing its extreme high register at m.61, as the first section explodes and calms down at m.63. As demonstrated here, the composer's additive process in the pitch realm occurs not only in steady agglomeration, as in the case of *Singing, Sing it!*, but also in an abrupt fashion in a calculated alignment with significant musical events.

The fact that the pitch material and harmonic rhythm are subservient to the broader distribution of musical gestures reflects a significant departure for a composer who was initially indoctrinated with Darmstadt aesthetics and the serial technique. The newly liberated composer sometimes finds musical gestures from the simplest pitch material, or even none thereof. Below a series of closely related musical gestures that occur repeatedly in multiple compositions by Chin, almost as her 'signature motive:'

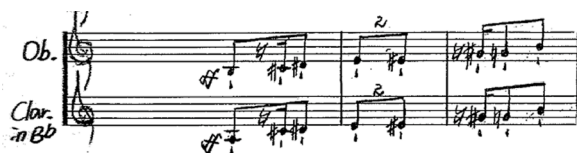


Figure 3.9a Oboe/clarinet, *Cis n'est pas Ces*³ mm.1-3, *Cantatrix Sopranica*

³ "C sharp is not C flat" in French: tongue-twister based on solfege



Figure 3.9b Mm.8-14

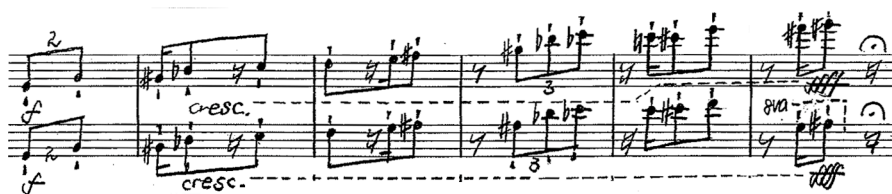


Figure 3.9c Mm. 20-25



Figure 3.10a Harp m.38-9, *Double Concerto*



Figure 3.10b Harp mm.81-2



Figure 3.10c Harp mm.112-5



Figure 3.10d Cencerro (pitched cowbell), mm.258-60



Figure 3.10e Harp, mm. 294-98

Figures 3.9, taken from *Cantatrix Sopranica*, and 3.10, taken from *Double Concerto*, display various forms of ascending scalar motion. The pitch material in *Cantatrix Sopranica* excerpts show alternating minor, major, and augmented seconds, whereas the excerpts from *Double Concerto* show different deployments of the whole-tone scale [C, D, E, F#, G#, A#] in various orders. The examples in Figures 3.9 use the basic rhythmic unit of eighth note with additive rhythmic transformation by adding or subtracting a sixteenth note to avoid regular beat patterns. Figures 3.10a-c do not have the lilting rhythm which creates a momentum. However, against the steady quintuplet

sixteenth notes in the other instruments, the basic unit of two quintuplet sixteenth notes creates a polyrhythmic interest. Additionally, in place of the lilting rhythm and its resulting momentum, this particular ascending gesture of a whole-tone set carries a momentum created by its large registral span. Figures 3.10d-e show the scalar ascent in lilting rhythm like those in *Cantatrix Sopranica*, only with more even scalar distribution of a straightforward whole-tone set. These gestures bring to mind the simplest form of motivic construction observed in the Christmas song ‘Joy to the World, the Lord Hath Come,’ in which the pitch material - a descending major scale - could not be simpler. What makes this basic material memorable even to children is its slight variation of rhythm, lending an otherwise square duple meter a distinct lilt. The similar process used by Chin brings the same kind of playfulness, suggesting the lightness of a children’s game. It is also noteworthy that every time this scalar motive returns, it is ever so slightly transformed, representing the notion of ‘repetition and development’ in her overall narrative.

The fourth movement of *Cantatrix Sopranica*, titled *Boule de Neige* (snowball), is another example in which the composer uses repetition and additive growth process to build the entire piece. However, this movement shows a fluid understanding and employment of additive process by the composer. *Boule de Neige* captures the spirit of ‘self-referential’ text-setting behind *Cantatrix Sopranica*.⁴ Chin

⁴ According to the composer’s note, *Cantatrix sopranica* is a self-referential work, or “an exploration of the act of singing.” Its themes center on the act of singing. For example, the first movement *Warming up – Tuning* imitates the vocal/technical exercises singers use to warm up their voices and the sounds of musicians tuning their instruments. Boosey and Hawkes Newsletter, Spring 2005, 7

uses a text by Harry Mathews – a member of OuLiPo⁵ – who subjected his poems to compulsory formal rules, in this case the visual form of a pyramid, or “snowball.” The snowball effect is realized visually in the score starting with fingering noise on strings by left hand pizzicato notation snowballing into guitar, harpsichord, percussion, winds and brass instruments. As seen in Figure 3.11 below, the descending scalar movement functions as an original cell, or falling snow flake, which fans out over time. Initially, the descending movement occurs at long intervals and mostly in the strings. Reflecting the “word art” the original poem sets up, as well as its irony and humor, the ‘falling snow’ cell repeats by the end of the piece at staggered entries densely filling out the score. The cells are placed not according to a strictly rhythmic process. Rather, they are placed proportionally according to the overall scheme of amassment. In other words, the additive process of this movement is rhythmically freer and gesture-based compared to the previous example shown in the second movement *Singing, Sing it!*

⁵ Derived from **ou**vroir de **l**iterature **p**otentielle, a circle of Dadaist poets around Georges Perec, who wrote “The Soprano Project De Iaculatione Tomatonis (in cantatricem),” a parody of scientific study on an imaginary experiment of throwing tomatos at 107 sopranos. Chin adapts the title of the piece *Cantatrix Sopranica* from this poem.

Figure 3.11 Mm.14-19, IV *Boule de Neige*, *Cantatrix Sopranica*

At the end of the movement, the entire ensemble is participating in similar descending scalar motions playing noises, as shown below:

The musical score is a page from a manuscript, showing the ending of the fourth movement, 'Boule de Neige', from the opera 'Cantatrix Sopranica'. The score is written for a large ensemble, including woodwinds (Flute, Oboe, Clarinet in B-flat, Bassoon, Horn in F, Trumpet, Trombone), percussion (Percussion I and II), guitar, harp, harpsichord, voices (Soprano 1, Soprano 2, C. tenor), and strings (Violin 1, Violin 2, Viola, Violoncello, Double Bass). The final section of the score features descending scalar motions across all instruments, creating a noisy, textured effect. The vocal parts (Soprano 1, Soprano 2, and C. tenor) sing 'le-ra rava le-ra ra va le rai'. The string section includes markings for 'arco sul ponticello' and 'arco sul tasto'. The harp and guitar parts have 'cresc.' and 'lampo immediatamente' markings. The percussion part has 'Bambou Shaker' and 'P' markings. The woodwinds and brass parts have 'cresc.' markings. The harpsichord part has 'gliss.' markings. The string parts have 'pizz.' and 'cresc.' markings. The vocal parts have '5' markings above the notes.

Figure 3.12 The ending of IV. *Boule de Neige* in *Cantatrix Sopranica*

The overall effect of this movement is an amassment, or ‘snowball,’ of soft noises filling the entire sound space. The additive growth occurs on temporal and timbral planes in this case. Unlike the example in *Singing, Sing it!*, not much growth occurs in volume as the dynamic growth is negligible, ending in piano.

Our examination of *Singing, Sing it!* and *Boule de Neige* has demonstrated the coexistence of continuity and development in Chin’s music. Amidst repetition and its resulting uniformity of texture, the music is internally static but it simultaneously develops. As emphasized before, the procedure used is additive growth, establishing the control of time, or temporal development, to be the crucial tool in understanding the composer’s music. In the case of *Singing, Sing it!*, the ostinato-driven development follows closely the lineage of Stravinsky and his influence on the ascendancy of rhythm to the foreground.⁶ Views of Stravinsky’s ostinato-driven development based on rhythmic strata might just as well describe the passage above by Unsuk Chin. Here is Boulez, for example:

Stravinsky... utilized the system of superimposed rhythmic pedals – that is to say, his polyphonic apparatus being made up to some degree of clearly characterized stages, he gives each of them an independent rhythmic period. The linkings of these several superimpositions will not be reproduced at the same intervals, but so as to obtain a varied disposition.⁷

On the other hand, *Boule de Neige* incorporates the additive process in a much looser way. In fact, this piece demonstrates the lineage of Ligeti, whose contribution to contemporary music included the ascendancy of density, satiety of sounds, and

⁶ Christopher Hasty has argued that temporal development is still viable and crucial to sensitive hearing of new music. Edward Cone, “Stravinsky: The Progress of a Method,” *Perspectives of New Music* 1 (1962): 18-26; Christopher Hasty, “On the Problem of Succession and Continuity in Twentieth-Century Music,” *Music Theory Spectrum* 8 (1986): 58-74.

⁷ Pierre *Boulez, Notes of an Apprenticeship* (New York: Alfred A. Knopf, 1968), 62, as quoted in “The Rhythms of Reiteration: Formal Development in Stravinsky’s Ostinati,” Gretchen Horlacher, *Music Theory Spectrum* 14, No.2 (1992):173

timbre to rival pitch and rhythm as leading forces. Much the student of the grand innovator, Chin's music embraces new musical dimensions such as timbre and texture as form-creating parameters. Stravinskian ostinato technique has evolved to a freer additive process where it functions as the basis for expansion and compression, internal and external movement. The instrumental writing in *Boule de Neige* demonstrates that, just as in Ligeti's approach, rhythm in Chin's music sometimes does not leave room for cyclic "periodicity or simple two or four-beat rhythm"⁸ as in Stravinsky's ostinatos. Ligeti's radical experiments with sound clusters and micropolyphony no doubt left their marks in Chin's understanding of music as no longer about 'horizontal and vertical.' Instead, music can be made by agglomerating heaps of tones and sounds,⁹ or mobile clusters of noise. Lobanova also identifies Ligeti as a pioneer in merging the borderline between music and other arts, thereby bringing about the rise of "graphic notation," and music as "happenings" or "instrumental theatre,"¹⁰ all of which have influenced the next generation of both electronic and acoustic composers, including the composer of *Boule de Neige*.

As sampled in the previous examples, the seven out of eight movements of *Cantatrix Sopranica* are quite distant in expression and their relation to one another.¹¹

⁸ Ibid. 57

⁹ Marina Lobanova, *György Ligeti: Style, Ideas, Poetics* Berlin: Verlag Ernst Kuhn, 2002: 44-46. The writer claims that Ligeti was responsible for the loss of the major role in pitch and rhythm by the 1950s. Instead the main parameters of music included dynamics, tone color and volume, which led to a new era of musical possibilities that explored "soft noises," or the continuum between sound and noise.

¹⁰ Ibid.

¹¹ III. *Cis n'est pas ces* is a play on enharmonic relationship as the title implies. The voices sing mostly tertian chords that include, for example, C sharp, C natural, or C flat, in close proximity and this pattern continues in transposed forms, traveling through different registers and tonal regions;
V. *Con tutti i Fantasm* is a parody of Baroque aria, especially in the Italian bel canto singing style. The countertenor leads the vocal part with exaggerated vibrato, while the sopranos later join in with cat-like purring noise, exhaustion, and yelling;
VI. *Yue Guang – Clair de Lune* is a parody of a Chinese folk song. Chinese text from the Tang dynasty is used, but less on a semantic level than for its Peking Opera-like sonic qualities;
VII. *Echo – Shadow – Canon* exhibits a self-referential use of text as the musical phenomena or process follow the title's scenario; the vocal parts are echoed by the instruments, shadowed, or they play canon with each other.

The first movement, *Warming up – Tuning*, also distinct with its sonic qualities that are full of noises as well as pitch centers, however, ties the entire piece together by foreshadowing materials from the other seven movements. In other words, the first movement is an opener as well as a summary of the entire piece. There are sections within the first movement in which the voices play an accompaniment made of cacophony of timbre while the instruments sustain the pitch center. The last movement, *EtüdedütE – Immense Voix* explores this relationship by starting the piece with the voices playing the role of instrumental accompaniment with tongue-clicking, but a role-switching occurs as the movement progresses.¹² The first movement also explores the boundary of noise and pitch in the human voices – e.g. in the use of isolated fricatives, inhaling noise, nonsense syllables – as well as in the instruments – e.g. plucked string noise, rustling percussion noise, key click noise on wind instruments, etc. Because of its role of foreshadow/summary, the first movement is the longest and the most diverse in its construction. It also exemplifies the block form used in other pieces by the composer as well.

Block form stands as an antithesis to the modernist pursuit of unity.¹³ Unlike the goal-oriented motion and continuity sought in tonal music, block form found its power in the memorable moments of subverted expectations. In the new post-tonal environment where continuity and unity were no longer a given of the system, the striking quality of the unexpected moments when complacency is destroyed attracted

¹² In the final movement, the tongue-clicking transforms to the sound of wood blocks, temple blocks, xylophone, and marimba, while the voices gradually regain their melodic role by the end of the movement.

¹³ Jonathan D. Kramer quotes Anton Webern to explain the concept of unity: “Unity is surely the indispensable thing if meaning is to exist. *Unity*, to be general, is the establishment of the utmost relatedness between all component parts. So in music, as in all other human utterance, the aim is to make as clear as possible the relationships between the parts of the unity; in short, to show how one thing leads to another.” Beyond Unity: Toward an Understanding of Musical Postmodernism from Concert Music, Rock, and Jazz Since 1945, Edited by Marvin and Hermann, University of Rochester Press, 1995:11

composers such as Stravinsky¹⁴ and his followers including Chin. Stravinsky's formal breakthrough resulted in a new type of momentum and excitement through exposing the transitions or joins, or by placing blocks of material or section together. Within each block or section, harmony was often static and rhythmic figure repetitive. In this fashion, the sectional stasis faced abrupt interruptions and discontinuity of the musical materials drove music forward with a new kind of energy. By presenting different musical ideas in abrupt alternation and fragmentation, Stravinsky kept the audience not knowing what to expect next, creating a certain kind of 'tension' and the resulting energy as demonstrated in three ballets and *Symphonies of Wind Instruments* (1943). Abrupt shifts in meter, speed, orchestration and timbre occur often in Chin's music as well. One example is the previously discussed Figure 2.12 as the first movement of *Violin Concerto* enters into a volatile, gamelan-like texture of octave doubling in the metal percussions. Below are additional examples of Chin's moments of discontinuous shifts from *Cantatrix Sopranica* and *Double Concerto*:

¹⁴ Scholars indeed recognize Stravinsky as the innovator who bore lasting consequences of discontinuity in form. Jonathan Cross investigates Stravinsky's techniques and aesthetics of block form in detail and its lasting impact on later composers in his book *The Stravinsky Legacy* (Cambridge University Press, 1999); Marianne Kielian-Gilbert parallels Stravinsky's formal designs to Pablo Picasso's paintings and Gertrude Stein's texts in which cyclic, additive, discontinuous or stratified presentations of ideas becomes the organizing principle of music in her article "The Rhythms of Form: Correspondence and Analogy in Stravinsky's Designs" *Music Theory Spectrum* 9, Spring (1987):42. On the other hand, Jonathan Kramer identifies Schoenberg, Berg, Bartók from Stravinsky's era and Sessions, Carter, Gerhard, and Henze from the later generation as the torch-bearers of 'continuity.' "Moment Form in Twentieth Century Music" *The Musical Quarterly* 64, No.2 (1978): 177-8

(45) ♩ = ca. 160

The musical score is written for a large ensemble. The first system (measures 43-44) includes parts for Flute, Oboe, Clarinet in Bb, Bassoon, Horn in F, Trumpet, Trombone, Percussion, Guitar, Harp, and Piano. The second system (measures 45-48) includes parts for Soprano 1, Soprano 2, and Contralto. The score is marked with various dynamics and performance instructions. A tempo marking of ♩ = ca. 160 is present at the beginning of the second system. The score is handwritten and includes many annotations and corrections.

Figure 3.13 VII. Echo – Shadow – Canon, mm. 43-8 from *Cantatrix Sopranica*

The alpine yodel-like section which began and continued until m.45 suddenly faces an abrupt shift as if the echo music is sharply torn off from its texture and replaced by a unison chorus of shouts. The movement returns briefly to the yodel-inspired section at m.64 until, at m.73, another sudden shift of texture occurs, carrying

the consistent diminuendo in pointillistic section that ends the movement. The ending of the movement, carried out in a steady manner, is also unexpected because of a disruption of expectation which, in this case, was one of ‘change’ after the composer has set the movement up for sudden shifts in gestures.

Let us now examine other types of discontinuity in the composer’s music:

Figure 3.14 Mm.7-11 *Double Concerto*

The beginning of *Double Concerto* demonstrates a brief disruption at m.8 of an insistent quintuplet ostinato pattern. The fast crisscrossing gesture at m.8 lasts less than a quarter, beat but it provides a sudden change of pulse, or a ‘jolt,’ with its crescendo when juxtaposed against the hypnotic consistency of the material before and after it. This short block of crisscrossing gesture proves to bear significant consequences later in the piece as the composer develops the interruptive gesture into its own block, either by itself or as a stratum:

Handwritten musical score for measures 119-130 of *Double Concerto*. The score includes staves for Flute, Alto Flute, E-Flute, Clarinet in B, Bassoon, Horn 1 in F, Trumpet, Trombone, Tuba, Snare Drum, Harp, Solo Saxophone, Solo Piano, Solo Violin, Violin 1, Violin 2, Viola, Violoncello, and Double Bass. The tempo is marked as "ca. 100" and "ca. 108". Measure numbers 120, 125, and 130 are circled. The score features various musical notations including dynamics (cresc., decresc., sf, p, f, mf), articulation (gliss., and., ord.), and performance instructions (nicht bedecken, nicht überlagern). A large "3" and "16" are written in the center of the page, likely indicating rehearsal marks or section divisions.

Figure 3.15 Mm.119-30 from *Double Concerto*

Here, the initial crisscrossing gesture is transformed into an extended string gesture which ends a long phrase, rather than in its initial interjectory role.

Figure 3.16 shows a musical score for measures 166-72 from *Double Concerto*. The score is a complex orchestral arrangement featuring woodwinds, brass, strings, and percussion. The woodwinds (Flutes, Oboe, Clarinet in B, Bassoon, Horns in F, Trumpets, Trombones, Tuba) and strings (Violins, Violas, Cellos, Double Basses) are playing intricate, crisscrossing melodic lines. The percussion section includes Snare Drum, Marimba, and Vibraphone. The score is marked with "cresc." and "decresc." indicating dynamic changes. The tempo is marked "ca. 120" and the key signature is one flat. The score is divided into measures 166-72, with a large "2" and "3" indicating a 2/3 time signature change. The woodwinds and strings are playing a complex, crisscrossing melodic pattern, while the percussion provides a rhythmic foundation.

Figure 3.16 Mm.166-72 from *Double Concerto*

Shown above is an example of a further transformation of the crisscrossing gesture.

This particular *col legno* texture has already started in m.163, continuing until m.169.

In this case, the string crisscrossing is not only fully extended but also is used as a stratum vertically juxtaposed against other strata of texture as if several patches, or blocks, are put together in a complex pattern.

The image displays a handwritten musical score for measures 306-11 of a piece titled *Double Concerto*. The score is written on multiple staves, with the following instruments listed on the left: Picc., Fl., Ob., Klar. in Es, Fag., Hr. 1 in F, Trp., Pos., Tuba, Schlag., Hf., solo Schlag., Xyl., Solo Klav., Vl. 1, Vl. 2, Bra. 1, Bra. 2, V.C. 1, and V.C. 2. The score features a complex texture with string crisscrossing, indicated by the large numbers 3, 5, 16, and 8. The string parts (Vl., Bra., V.C.) are marked with 'sul' (sul ponticello) and 'a' (arco). The woodwind and brass parts are marked with 'f' (forte) and 'decresc.' (decrescendo). The percussion parts (Picc., Fag., Hr. 1, Trp., Pos., Tuba, Schlag., Hf., solo Schlag., Xyl.) are marked with 'f' and 'decresc.'. The Solo Klav. part is marked with 'f' and 'decresc.'. The score is marked with a circled '310' and a circled 'I'. The tempo is marked as 'ca. 128-132'.

Figure 3.17 Mm.306-11 from *Double Concerto*

The above example is from approximately half way into the piece where the complex patchwork of blocks of textures takes a sudden turn and a brand new material is introduced. Centered around two pitches – A and E – for some thirty measures before adding another pitch at a time, this section is called ‘granular’ for its repeated and ‘grain-like’ texture. Its focus and simplicity are contrary to the previous densely stratified material. Whereas there were multiple layers progressing sometime simultaneously and sometimes at independent rates, the new granular section is solely focused on timbral elaboration on the two center pitches.

The stark juxtaposition of the contrasting materials in Chin’s music differs from Stravinsky’s block form in that the composer sometimes thinks of her gestures to have a cause-and-effect relationship between them. In *Double Concerto*, the concept of ‘attack and reaction’ plays an important role in the deployment of different blocks. In other words, a gesture bears consequence in what type of gesture follows it. In the above example, although the granular music is presented in an unpredicted and unprepared fashion, its presence demonstrates a sonic logic – after satiation comes a relaxation, or a release of tension. In this sense, Chin’s blocks can be understood as ‘sound masses’ in much the same way Varèse thought about his compositions. With her extensive experience from the electronic studio, a causal relationship between material-inspired sound blocks is perhaps a natural consequence. The type of juxtaposition shown in the above example also reinforces the composer’s own explanation of the central idea behind *Double Concerto* – contrasting two physical states; complexity vs. simplicity.¹⁵ Chin also expressed that she wished to create a state of dream in the piece where movement and standstill coexist.

¹⁵ From Chin’s lecture at Cornell University, May 2007; Chin also stated that, in *Double Concerto*, she intended to recreate a type of gamelan music, its rhythmic complexity and distinct timbre.

Handwritten musical score for Mm. 402-5 from *Double Concerto*. The score is written for a large ensemble, including the following instruments and parts:

- K. fg. (Kornet flügel)
- Hr. in F₂ (Horn in F₂)
- Trp. (Trumpet)
- Pos. (Posaune)
- Tuba
- Gran-Cassa (Großcassa)
- Hf. (Harp)
- solo Schg. (solo Schlagzeug)
- 3 Tom-T. (3 Tom-Toms)
- 3 Timp. (3 Timpans)
- solo Klav. (solo Klavier)
- 8 Bass (8 Basses)
- Vl. 1, 2 (Violins 1, 2)
- Bra. 1, 2 (Brass 1, 2)
- V.C. 1, 2 (Viola Concerto 1, 2)
- K.B. (Kornet Bass)

The score includes various musical notations, including notes, rests, and dynamic markings such as *cresc.*, *sc.*, *mf*, *f*, and *p*. A tempo indication is present: $\text{♩} = \text{ca. } 120 \text{ (d = ca. } 60\text{)}$. The score is divided into measures by vertical bar lines, and the instruments are grouped by horizontal lines.

Figure 3.18 Mm.402-5 from *Double Concerto*

Taken from middle of an interlude that is flanked by two closely- related granular texture sections, the above example demonstrates yet another type of discontinuity following the logic of ‘material’ blocks. After an extensive ‘granular’

section lasting for eighty-five measures, the composer introduces an abrupt change of texture at m.387, which lasts until m.404 as shown above. Represented by the energy of loud timpani, featured for the first time in the piece, this interlude in the low register and in its driving rhythm is certainly an unexpected shift from the high-pitched and focused energy of the granular section. An abruptness is even more accentuated as the timpani-dominated interlude is interrupted by a modified granular section from m.405 for five measures. Such frequent timbral and registral shifts, the contrast between forward momentum and stasis, and the resultant drama seem to be at the core of Chin's conception of how and which blocks are placed together.

One notable element about Chin's block form is that each time a block returns, its duration, density, or pitch content is ever so slightly altered. It is as if, even within the blocks, the composer continues the additive process of various elements to control the overall drama. For example, the initial austere-sounding granular section becomes gradually superimposed with the densely stratified layers taken from the first half of the piece as it transforms into a massive climax of the entire composition. In other words, each time a block, or mass, reappears, the elements are exchanged or rearranged so that the mobility of the blocks allow molding of yet newer blocks. This type of fluid understanding of block form distinguishes Chin's music as containing a measure of 'sound sculpting,' aptly reflecting the influence of technology and the acoustic understandings of our time.

In the current chapter, various developmental schemes by Unsuk Chin were discussed. Following the conclusion of this chapter, I present a series of visual examples to give a summary of how each of the small phrases and large blocks are put together. A formal chart, an analysis table of the entire *Double Concerto* and the composer's own sketches of *Double Concerto* and *Violin Concerto* are included as appendices.

CONCLUSION

A close look at Chin's three works – *Violin Concerto*, *Double Concerto* and *Cantatrix Sopranica* – introduces us most immediately to the composer's unique sonic environment. Each piece strives to evoke a sound world that is traditionally unheard from the traditional Western ensemble, or perhaps heard in a dream. Whether its sonic inspiration is from the Balinese gamelan ensemble, an electronic studio, or a rehearsal stage of opera singers, the composer demonstrates the significance of an acoustic 'signature' in her music. The importance of such a timbral concern provides a key to some of the broader formal issues in the composer's music.

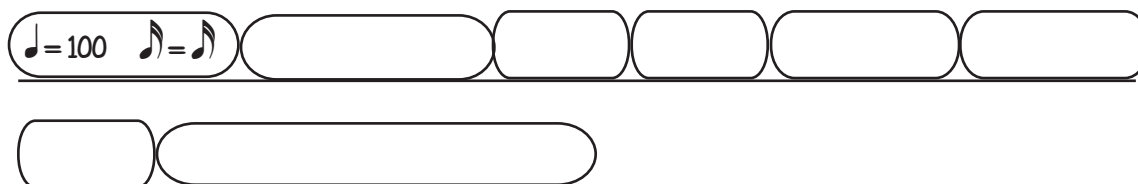
Chin programs sound gestures that draw in listeners to present-moment events. These moment events do not follow the goal-oriented narrative of traditional Western music but embrace discontinuity and conjunctive logic. The moment-to-moment relationship in Chin's music is often carefully planned out to subvert the listener's expectation, sometimes with abrupt changes, and sometimes with static insistence of ostinatos. Moments of stasis are constructed with embedded nuclear rhythmic subdivisions so that ostinatos are not only static but also moving at different rhythmic hierarchy. The multilayered rhythmic construction provides a technical tool to maintain a surface consistency but shift pulse and meter to launch textural shifts.

Abrupt changes and stark contrasts from moment to moment, section to section, and movement to movement create discontinuity but they also tend to follow an inner logic of 'gestalt,' or shape. Chin's sonic concern often surrounds a conjunctive logic to juxtapose, or simultaneously present, two contrasting shapes, material, and emotional states – e.g. movement vs. stasis; mechanical and exact transformation vs. spontaneous shift; dullness and sharpness; growth of sound mass vs. its sudden disappearance, humor vs. the grotesque, and lightness vs. heaviness. The

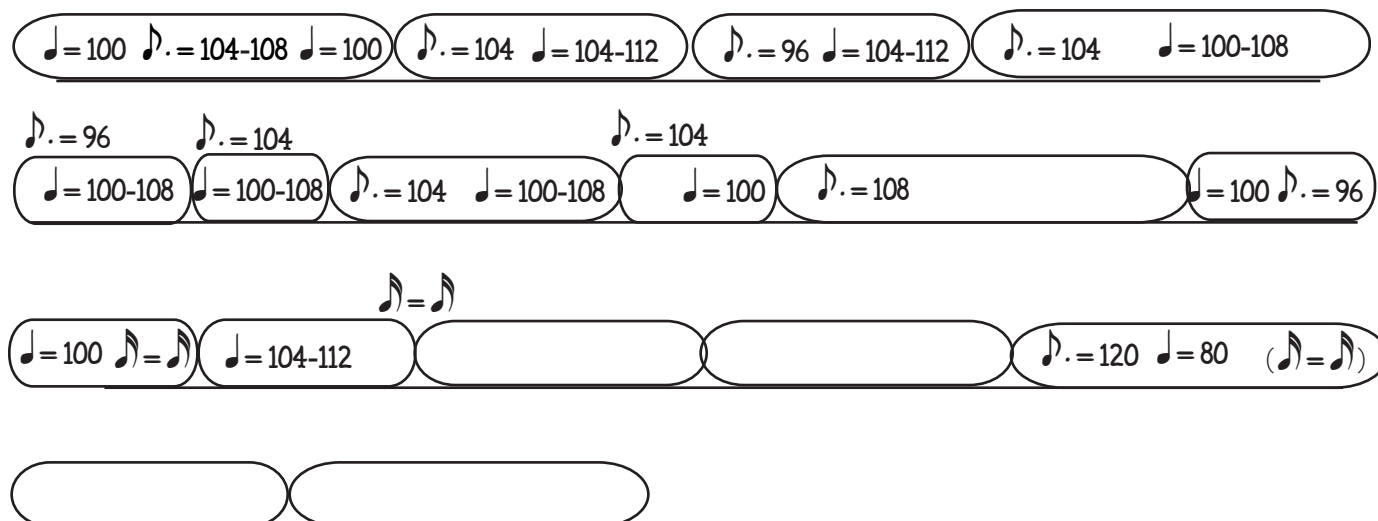
paradox and irony of the conjunctive logic, at the core of the composer's aesthetic style, gives Chin's music its distinct fantastic aura. By weaving disparate blocks of sounds often made up of layers of ostinatos, Chin's compositional method weaves a musical collage, or quilts, made up of fragments of fantastic memory.

Part I

Section 1: Introduction (measures 1 - 55; dominant meter 3/4 and 3/16)
bar grouping - 8, 9, 4, 4, 6, 6, 4, 14

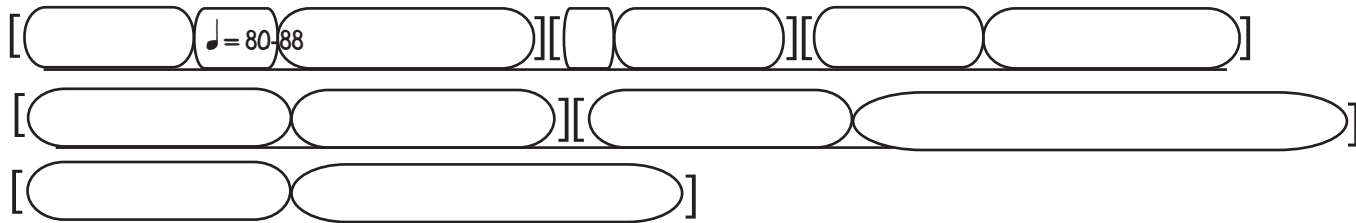


Section 2: Development 1 (measures 56 - 204; dominant meter 3/4 and 3/16)
bar grouping - 12, 9, 8, 13, 5, 4, 9, 4, 13, 6, 6, 7, 9, 10, 13, 8, 11

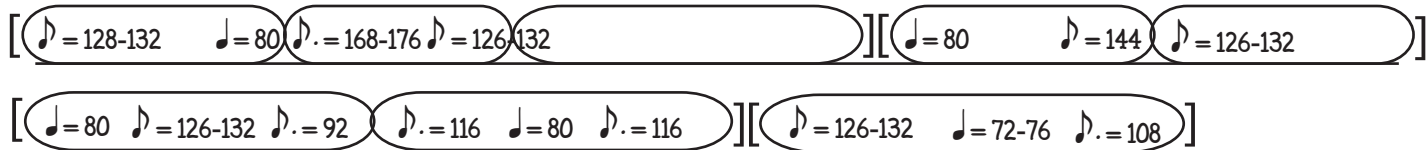


Part II

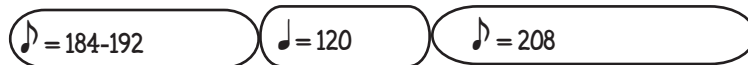
Section 3: Development 2 (measures 205 - 310; dominant meter 3/4(9/8),
3/16 (exploration of crisscrossing glssandi idea in various length)
bar grouping - [6, 3, 10], [2, 6], [6, 10], [8, 9], [9, 17], [9, 14]



Section 4: Granular section I (measures 311 - 396; dominant meter 5/8,
and brief appearances of 3/4, 3/16) The quintuplet ostinato figures become simplified in
pitch resulting in a new granular texture - bar grouping - [9, 7, 12], [9,9], [12, 13], 15

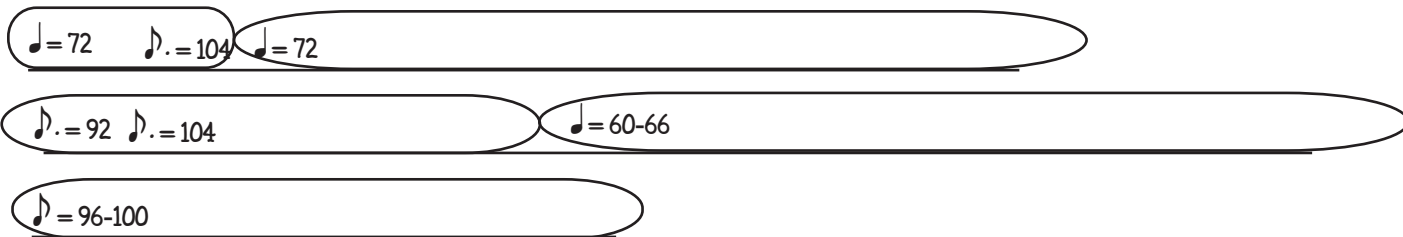


Section 5: Interludes (measures 397 - 421; dominant meter 5/8+3/16, with a 4/4 interruption)
Timpani ostinato creates a new texture; briefly interrupted by fragments of
granular texture section in the middle.
- bar grouping - 8, 6, 11



Part III

Section 6: Granular texture slowly transforms to massive climax;
 gestures such as granular material, crisscross glissandi, stabbing punctuations alternate
 until they superimpose upon one another in a mass-layered climax.
 (measures 422 - 531; dominant meter 3/4(6/8)) - bar grouping - 9, 24, 18, 35, 24



Section 7: Transition to Recap - Recapitulation - Coda (measures 532 - 540; dominant meter 4/4(2/2))
 A brand new texture provides an unexpected transition back to the beginning.

$\text{♩} = 80$ or $\text{♩} = 40$ - bar grouping - 9

Recapitulation (measures 541 - 576; dominant meter 3/4 and 3/16)
 bar grouping - 14, 22



Coda (measures 577 - end; dominant meter 6/4, with a brief 3/4, 3/16 interruption)
 Slowed down glissandi gestures - bar grouping - 29, 7



APPENDIX II

ANALYSIS OF *DOUBLE CONCERTO*

Material Key Legend

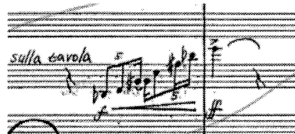
- A. gamelan-inspired insistent ostinato music in quintuplets. (m.1)



- B. faster crisscrossing/gliss music (m.8)



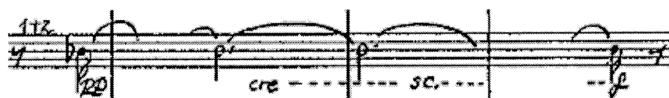
- C. rising harp music (m.38)



- D. stabbing punctuation music (m.55)



- E. suspended echo (m.65)



- F. slower glissandi in the strings (m.59)



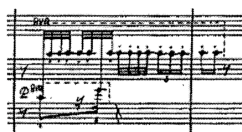
- G. slower winds: quintuplet figure with leaps (m.26)



- H. lilting, ascending scalar music (m.240)










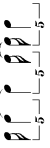
- I. granular music (m.313)











- J. hairpin effect (m.213)



Part I
Section 1: Introduction of materials

Material	Phrase	Measure	Meter	Tempo	Rhythmic Unit	Accent (Beat) Pattern	Pitch/ Register	Gesture	Instrumentation
A	1	1-7	3/4, 2/4	$\text{♩} = 104 - 112$		♩ x 5, 3, 5, 3, 2, 2	all 12 tones alternate; fixed at middle register	dense, machine-like ostinato at pp with cyclic rolls; consistent figures ()	solo percussion (vib, cowbell), solo piano, and sus. cymb.
B		8	3/16	$\text{♩} = 16$				criss-crossing scale, glissandi	same as before without cowbell
A	2	9-16	3/4, 2/4			phrase 1 repeats with deviation: ♩x5, 3, 2, 5, 3, 2, 2	prepared piano is made to ring only E4 longer	same as the beginning with <i>cresc.</i> added	continues the same material (with cowbell)
B,E		17	3/16				partial whole tone collection 1	winds sustain a chord at p	fl, alto fl, ob, cl added for the first time
E	3	18-21	3/4			♩ x 6, 6, 5 (cont.)	long-held chord in the winds is in the same register as the rest	3 sus. cymb. alone carry the ostinato for 2 brief bars, followed by the vib. ostinato for the next 2 bars	solos drop out for the first time while winds hold the chord, but this time with <i>cresc.</i> ; sus. cymb. quintuplet
A,G	4	22-25	2/4, 3/4			(5 cont.), 5	winds expand the upper register; all 6 notes of WT collection introduced	quintuplet pattern in the winds: 	fl, alto fl starts shadow the quintuplet material; wind entries are staggered

Part I
Section 1: Introduction of materials

A,G	5	26-30	3/4, 2/4		6-bar <i>cresc.</i> is now more continuous with weighted beat pattern gone			the subdivided quintuplets in winds are grouped (as shown above) at a slower pace than the solos	eh, cl added to the shadow material; more cowbell and metal blocks start to add another rhythmic layer of ostinato.
B		31	3/16					tambourine roll adds <i>cresc.</i>	same 2 soloists with sm. tamb.
A,G	6	32-36	3/4, 2/4		same as phrase 5			almost exact repeat of mm. 26-30	
B,E		37	3/16						horn added for 1st time
A,C,E	7	38-40	3/4			whole tone set 1 (CDEF#G#A#) appears in different order in harp	rising harp solo figure is new; intervals alternate between M3 and tritone	Hn, hrp, 2 soloists w/o cowbells	
B		41	3/16				vib. gliss only ascending instead of criss-crossing		
A,E,G	8	42-52	3/4		dynamic scheme of <i>ff</i> 3 bars, 5-bar <i>dim.</i> , 4-bar <i>cresc.</i>	upper register expands (m.45), then contracts (m.50)	winds play, first, a homophonic, then a staggered pattern shown in phrase 4	winds <i>dim.</i> from 3rd bar of phrase. Trombone added for first time at m.50	
B,D,E		53-55	3/16				strongest <i>cresc.</i> of all 3/16 bars with winds and brass support	strong harp, cymbal, jet whistle flute figure to end the 1st section	

Part I, Section 2: Development of materials

Material	Phrase	Measure	Meter	Tempo	Pitch/ Register	Gesture	Notable Instrumentation
E	1	56-57	3/4	$\text{♩} = 100$	E, G# hung over (WT1)	suspended chord; stillness following the stabbing punctuation of two notes in the piano	high violin echoes the piano attack
B(expanded), D		58-65	3/16	$\text{♩} = 104-108$	E, G#, A# (WT1)	crisscrossing glissandi gesture is expanded in length and tessitura (2 bars) and is executed by the strings instead; tempo of the crisscross/glissandi music is now faster and specific rather than $\text{♩} = \text{♩}$ as in the 1st section; the stabbing punctuation gesture in mm.54-55 recurs in expanded form	string section
E		66-67	3/4	$\text{♩} = 100$		stillness except for the <i>cresc.</i> in horn	solo pno, trpt, harp, cymbal
B(expanded)	2	68-70	3/16	$\text{♩} = 104$	mixture of WT1, WT2	crisscross-glissandi gesture is expanded to 4 bars of 32nd note activity trailing off into ppp; (faster-moving section and its suspended echo alternate, creating an effect of attack/reaction, or time sped up and relaxed)	SD enters
A, B, E, G		71-76	3/4	$\text{♩} = 104-112$	tutti play WT1; E, G#, A# emphasized with sfz in the piano;	material A returns in solo piano; pitch limited to WT1; upper register expands. Sextuplet 16ths in the upper strings are an expansion of the scalar idea of B in succession rather than in a cluster. The wind material that accompanied A in section 1 is now a denser texture as a result of having staggered entries	1st and 2nd violins much more active
B, D	3	77-79	3/16	$\text{♩} = 96$	WT1 notes all become accented	stabbing gesture of m. 54, 55 is in the hp, vib; piano takes material B and expands into 2 bars from the previous 1 bar gesture	harp, vib and solo piano, antique cymbal
A, B, C, G		80-84	3/4	$\text{♩} = 104-112$	rising harp figure outlines WT1	same material as 71-76 but it is now contracted by 1 bar; texture is much more dense and involves more of the orchestra; rising harp figure is still made of alternating M3 and tritone just like mm.38-40, and appears amidst many more textural layers	vla, vc add to str. texture; eh, hns add to wind texture; rising hp figure is back.
B, E, D	4	85-87	3/16	$\text{♩} = 104$	WT1	material B is longer and more violent but still ends in a diminuendo; B is accompanied by stabbing attacks	

Part I, Section 2: Development of materials

A, B, C, E, G	88-97	3/4	$\text{♩} = 100-108$	mostly WT1; occasional mixing of WT2 in the string scales	string texture arising from material B is now continuous rather than episodic; pno/vib solos are reinforced by percussion; rising harp figure outlining WT1 mix up the order; sfz are added in the solo texture evenly to all notes of WT1; a long 10 bar structure for this A material (longest appearance in the 2nd section)	solo percussion part adds even more cowbells and is enforced by timbales, metal bleks, sm.tamb.
B, D, E, F	98-99	3/16	$\text{♩} = 96$		crisscross/gliss music is immediately followed by the slow downward gliss in the strings (material D?)	criss-crossing vib
A, B, D, F	100-102	3/4	$\text{♩} = 100-108$		the downward str. gliss continues even through the come back of material A (solo pno/vib.) bleeding into the 3/4 section for the first time; winds start a long sequence of leap/stabbing punctuation. Also reoccurrence of rising harp figure	string glissandi
B, D	103-104	3/16	$\text{♩} = 104$		solo piano is infected by material B in continuing the upward motion of the 32nd notes form the strings	punctuating notes in flute
A, B, G	105-106	3/4	$\text{♩} = 100-108$	WT1	material A and B are now represented in equal measure	combination of punctuating notes and quintuplet in solo piano
B	107	3/16	$\text{♩} = 104$		pno's upward 32nd notes come back for brief 1 bar; gl. doubles the pno's accented notes	pno, harp, glock
A, B, C, G	108-116	3/4	$\text{♩} = 100-108$		pno's sfz are now more frequent and more violent; horns add to the density of leap/stabbing punctuation which is an accompaniment layer; rising hp figure (WT1 dispersed) now occur every 2 bars; finally the string material originally mutated from material B is at its most consistent, dense, faster and louder ending in 32nd notes in 3/16	increasing activity in upper strings
D	117-118	3/16	$\text{♩} = 104$		stabbing gesture of mm. 54, 55 returns	glock, harp, violin, solo piano, flute
E	119-120	3/4	$\text{♩} = 100$		stillness and <i>cresc.</i> on held note	solo piano, violin

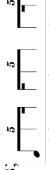
Part I, Section 2: Development of materials

B, D, E, F	9	121-134	3/16	$\text{♩} = 108$	WT1 (scales); E, G#, A#, C (stabs)	the high violin note continues to <i>cresc.</i> and then leads to an expanded B material expanding into 6 bars accompanied by diminishing snare drum. Leading to 3 bars of stabbing figure leading to another still note but now in the lowest register heard so far in the piece	SD strings
E	10	135-137	3/4	$\text{♩} = 100$		low C held by the lowest instruments of the orchestra for 3 bars, <i>cresc.</i> for the last two bars	bass, contra bassoon, trombone, tuba
B		138-140	3/16	$\text{♩} = 96$	WT1	abrupt end of the low note followed by the rising solo piano (material B), fermata over silence	solo piano
E, D	11	141-145	3/4	$\text{♩} = 100$	A#, C, G#, F#, E (still part of WT1, but with a different order)	another low C held by the low instruments but now accompanied by the stabbing figure, but this time resembling the sfz introduced in material A in rhythm; so far, the stabbing figure had only been associated with 3/16 section, but now it is along side in 3/4 and with material associated with A	brass
B		146	3/16	$\text{♩} = \text{♩}$		material B is reinforced by the strong tam-tam color	tontom
A, E, G	12	147-152	3/4	$\text{♩} = 104-112$	WT1	material A returns not in the solo instruments but in the upper strings; Vib. is replaced by mar. to play glissandi in new color to represent material B; B is accompanied by col leg. battuto glissandi in cellos	marimba
B		153	3/16	$\text{♩} = \text{♩}$	WT1	brief isolation of material B; all tempo changes from this point on except one spot is 16th=16th rather than a new tempo in the 3/16 section.	marimba, piano
A, C, D, G	13	154-160	3/4, 2/4	$\text{♩} = \text{♩}$	WT1	violins now play material A but in triplets; basses take up the glissandi of material B; winds continue leap/stabs in quintuplet pattern; brass take up the task of representing the stabbing figures but in triplets	winds
B		161-162	3/16	$\text{♩} = \text{♩}$		long rising glissandi in marimba reinforced by rolled pizz in all strings; another modified material B	marimba

Part I, Section 2: Development of materials

Material	Phrase	Measure	Meter	Tempo	Pitch/ Register	Gesture	Notable Instrumentation
E	1	56-57	3/4	$\text{♩} = 100$	E, G# hung over (WT1)	suspended chord; stillness following the stabbing punctuation of two notes in the piano	high violin echoes the piano attack
B(expanded), D		58-65	3/16	$\text{♩} = 104-108$	E, G#, A# (WT1)	crisscrossing glissandi gesture is expanded in length and tessitura (2 bars) and is executed by the strings instead; tempo of the crisscross/glissandi music is now faster and specific rather than $\text{♩} = \text{♩}$ as in the 1st section; the stabbing punctuation gesture in mm.54-55 recurs in expanded form	string section
E		66-67	3/4	$\text{♩} = 100$		stillness except for the <i>cresc.</i> in horn	solo pno, trpt, harp, cymbal
B(expanded)	2	68-70	3/16	$\text{♩} = 104$	mixture of WT1, WT2	crisscross-glissandi gesture is expanded to 4 bars of 32nd note activity trailing off into ppp; (faster-moving section and its suspended echo alternate, creating an effect of attack/reaction, or time sped up and relaxed)	SD enters
A, B, E, G		71-76	3/4	$\text{♩} = 104-112$	tutti play WT1; E, G#, A# emphasized with sfz in the piano;	material A returns in solo piano; pitch limited to WT1; upper register expands. Sextuplet 16ths in the upper strings are an expansion of the scalar idea of B in succession rather than in a cluster. The wind material that accompanied A in section 1 is now a denser texture as a result of having staggered entries	1st and 2nd violins much more active
B, D	3	77-79	3/16	$\text{♩} = 96$	WT1 notes all become accented	stabbing gesture of m. 54, 55 is in the hp, vib; piano takes material B and expands into 2 bars from the previous 1 bar gesture	harp, vib and solo piano, antique cymbal
A, B, C, G		80-84	3/4	$\text{♩} = 104-112$	rising harp figure outlines WT1	same material as 71-76 but it is now contracted by 1 bar; texture is much more dense and involves more of the orchestra; rising harp figure is still made of alternating M3 and tritone just like mm.38-40, and appears amidst many more textural layers	vla, vc add to str. texture; eh, hns add to wind texture; rising hp figure is back.
B, E, D	4	85-87	3/16	$\text{♩} = 104$	WT1	material B is longer and more violent but still ends in a diminuendo; B is accompanied by stabbing attacks	

Part II
Section 3: Development 2 - selected materials from the previous section are isolated and explored



Material/Phrase	Measure	Meter	Tempo	Pitch/ Register	Gesture	Notable Instrumentation
D, E, I	1 205- 210	3/16	$\text{♩} = 80-88$	A, F#, E, C, B, D	stabbing figure return in the piano; the pitches are mixed from both WT1, 2 collections and are followed by the ripple effect in the brass instruments as they hint at the granular texture	piano's stabbing punctuations make the pitch structure transparent for the first time
E, F, J	211- 213	3/4	$\text{♩} = 80-88$	D	last note D lingers in a long series of cresc. and dim. at various lengths (electronic music-like effect); another strand of D simultaneously goes through a harmonic glissando; a classic example of a 'reaction' from the 'attack'	contrabassoon sustains D; contrabass does D harmonic gliss
B, E, F	214- 220	cont'd	cont'd	A, G, A#, C, D, F#, G#, E, A#, D, G#, A#	Each punctuation stab generates different styles of reaction such as long-held echo tone, fast descending scale, tremolo glissando ascent, harmonized ostinato (marimba quintuplets), etc.	each 'reaction' material thickens in texture within each sub-choir and start to permeate the whole orchestra
B'	221- 222	cont'd	cont'd	D, F, G#, A#, D, E, F (1st vlins); scales alternate in m/M 2nds, min 3rds	long, ascending scale in lilting rhythm appears in the first violins; the  main gesture is supported by shimmering string harmonic texture; faster ascending scales in the woodwind reinforces the upward momentum	strings create a complex harmonic shimmer; double bass has an descending glissando; marimba, 1st vlins, cl, contra bsn have ascending glissando/scales
D, F	223- 228	cont'd	cont'd		piano's stabbing punctuations hints at the lilting rhythm (subdivided quintuplet) of the first violins and introduces 32nd note burst across over five octaves; each 'attack' bears consequence of more varied gestures and for extended durations; string section ends in a long glissandi passage in opposite directions (criss-crossing)	same orchestral deployment as mm. 214-220

Section 3: Development 2 - selected materials from the previous section are isolated and explored

Part II

D,E,F(e), H	3	229-234	cont'd	cont'd	WT2: WT1 (except for C, D)	piano and pitched cowbell take on a full lilting quintuplet rhythm while outlining two whole-tone scales; between the two lilting, ascending scales, the stabbing gestures are rather brief; string section's echo tone on Bb take on a life of its own in upward gliss/scales	the main gestures are still echoed by reactionary tones in the brass and the strings
B,D,E, F,H		235-244	cont'd	cont'd	piano's stabbing notes trace WT2	the brass section introduces 32nd notes descending scales and repeated notes (foreshadowing the granular texture); strings' upward harmonic glissandi are staggered and faster, helping the upward momentum of the woodwinds; after the harp's upward scale in lilting quintuplet rhythm, the phrase ends with another criss-crossing gestures in the strings	ascending string glissandi, harp and marmba scalar figure, expanded string criss-crossing 32nd notes developed further from criss-crossing glissandi
E,D,G, H,J	4	245-252	cont'd	cont'd		the stabbing gestures continue to appear in alternation with the ascending scalar chords in lilting quintuplet rhythm; pitched cowbell hints at a granular texture in mm.247; this segment is active as if the upward momentum has all of a sudden slowed down because of the lack of fast glissandi/scales	bass D pedal continued by tuba C pedal, string harmonic figure
B,D,E, H,I		253-261	cont'd	cont'd	starts with WT1 in woodwinds, ends in mix of WT1, WT2	frequency of the upward scalar chords in lilting quintuplets has taken over the stabbing punctuation music; the woodwinds' repeat marcato's last longer, making the granular texture a full segment rather than a fleeting hint; strings' crisscrossing gliss gestures return	woodwind granular passage, string glissandi, cencerros lilting figure

Section 3: Development 2 - selected materials from the previous section are isolated and explored
Part II

B,D,E, G,H	5	262- 270	cont'd	cont'd	cont'd	piano's stabbing notes trace WT1; all other layers trace WT1	lilting quintuplets no longer ascend, but rather becomes fixed in the high register; woodwinds and brass shadow also in their own fixed registers; strings appear in fast 32nd upward scales in staggered entry, ending in a crisscross; this last upward scale is connected to the piano's upward arpeggio gesture, now blurring the line between the 'attack' and 'reaction'	entire ensemble is broken up in to choirs that have different functions
H+D		271 - 287	cont'd	cont'd	cont'd		lilting quintuplet ostinati music becomes relentless; and the texture is becoming more complex and layered with each instrumental section playing its own distinct rhythm and pitch fragments; e.g. the strings combine and the lilting  rhythm against the constant  in the marimba	same solo passages, strings play shimmering harmonic chord accompaniment in place of the upward scales in the previous section
	6	288- 296	cont'd	cont'd	cont'd	WT1, WT2 alternate; harmonic fragments become more complex	lilting quintuplets start moving upward again in an ever-rising texture; this ascent is supported by the woodwinds and the strings in slower upward motion; brass section and the pitched cowbells are fixed in register and stationary in character	same; harp joins in the middle to double the upward, ever-rising motion
		297 - 310	cont'd	cont'd	cont'd		the same music continues but the texture starts to thin out until the lilting quintuplets dissipate in upward 32nd-note scales, combined with the strings, ending the whole section into whispering soft glissandi	ascending 32nd-note figure in strings becoming ascending glissandi

Part II
Section 4: Granular Section A

Phrase	Measure	Meter	Tempo	Pitch/ Register	Gesture	Notable Instrumentation
1	311- 319	5/8	$\text{♩} = 128$ - 132	A, E	a new section, consisting mainly of repeated staccato attacks of 32nd notes on two fixed pitches; instruments one by one enter at slightly different tempi playing repeated A's and E's in the high register as if in an acoustic realization of granular synthesis; due to the rhythmic layers at different pace and the diminuendo effect, each granular phrase relaxes in density at the end of each two-bar phrase	xy!, hp, piano, vln harmonics
	320- 326	5/8, and 3/4	$\text{♩} = 128$ - 132 and $\text{♩} = 80$	A, E/ F#	after a full-bar silence, the granular texture continues for four bars before relaxing in shimmering string harmonies playing A, E; violas introduce a new pitch F# and the granular texture starts again by harp tremolo cresc.	cont'd
	327- 338	3/16, and 5/8	$\text{♩} = 126$ - 132	C, F#, E/ A, E, D, F#, G#	piano briefly accentuates new pitches C, F#, E in the familiar stabbing punctuation; granular texture returns and becomes relentless without relaxing; piccolos and clarinets add to the granular texture by playing pointillistic punctuations	piccolo and high clarinet added, cello harmonics
2	339- 347	3/4, 3/16, and 5/8	$\text{♩} = 80$ and $\text{♩} = 144$	A, E, D, G#, F#, C/ F#, E, C	the shimmering string harmonic texture returns for a longer stretch of time, and is supported by the wind section playing soft, sustained cresc-dim notes (F#, E, C); piano's brief, stabbing punctuations regain the momentum as the strings pick up their energy and ends the segment with the familiar crisscrossing scales/glissandi music	high string harmonics with high woodwinds added

Part II						
Section 4: Granular Section A						
	348-356	5/8, and 3/16	$\text{♩} = 126$, 132	A, E, F#, A#, C, D, G# (WT1 and A, E)	granular texture returns and lasts for seven bars with more instruments (woodwinds, temple blocks) intensifying the texture; the pitch material is much more varied compared to the beginning; temples blocks add <i>cresc/dim</i> swells to the on-going granular texture; piano's <i>sfz</i> punctuations bring out the alternating pitch centers	temple block added
3	357-368	3/4, 5/8, 3/16, and 3/4	$\text{♩} = 80$ and $\text{♩} = 126$, 132	ending chord consists of D, G#, C, E,	busy <i>ostinati</i> granular texture stops in a sustained tremolo chord in the winds/strings for two bars; granular music re-enters but becomes interrupted again by the sustained chord lasting this time for five bars; string tremolos play a slight variation of the sustained texture by playing staggered accents	muted brass ends the section
	369-381	3/16, 3/4, and 3/16	$\text{♩} = 116$		the stabbing punctuation (piano) music from the earlier section is re-introduced in the whole orchestra; fast 32nd notes in the string section takes over the momentum while making an insistent <i>cresc</i> ; piano's explosive downward chordal music and the subsequent upward arpeggiation makes a segway to the next granular section	low string tremolo leading to 32nd notes in strings
4	382-396	5/8, 3/4, and 3/16	$\text{♩} = 126$, 132		the longest stretch of the granular music unfolds for ten bars; this section is simultaneously juxtaposed with the violin's busy, non-granular music made up of running 32nd notes in the high register, providing the connection to the preparatory material to the crisscrossing scales that appeared in the previous sections; the long <i>cresc.</i> ends with the stabbing piano note in a new, low register; echoed by the brass section; the tail is elaborated with horn's upward glissando followed by piano's busy descent	high solo trumpet punctuation and horn rip

Part II
Section 5: Interlude

Phrase	Measure	Meter	Tempo	Pitch/ Register	Gesture	Notable Instrumentation
1	397-404	5/8 + 3/16	$\text{♩} = 184-192$	C, E, F#, G#, A# (WT1)	sudden shift into a brand new material; piano in the lowest register and timpani, together, weave an exciting rhythmic ostinato so far unheard; a new asymmetrical meter with changing accent patterns in the fast sixteenth notes; double bass pizzicato and tuba staccatos provide additional rhythmic layer and accents	timpani, piano, double bass, contra bassoon, tuba
2	405-410	4/4	$\text{♩} = 120$	WT1	fragments of granular music in the strings and xylophone alternate with fragments of rising music in the winds; solo piano plays a continuous pattern of rise and fall made up of large leaps	strings, solo piano, xylophone, harp, horn, upper woodwinds
3	411-421	5/8 + 3/16	$\text{♩} = 208$	WT1; shifts to WT2 at 415	return of phrase A, but lasting longer and with more instruments are added to heighten the excitement; all six notes of the WT1 are used; strings cyclically play ascending arpeggio motion which, towards the end of the phrase, becomes more frequent, leading into the next section	timpani, piano, cello, double bass, contra bassoon, trombone, tuba, bass drum

Part III
Section 6: Granular Music to Climax

Materials	Phrase	Measure	Meter	Tempo	Pitch/ Register	Gesture	Notable Instrumentation
A	1	422-430	3/4, 3/16, 3/4, 2/4	♩ = 72 and ♩ = 104	WT1/WT2 mixture; A, E, D, G#F#, C/ F#, E, C	sudden halt of movement - 2 pitches (B, F) held until the movement returns abruptly by vibe/piano's fast, downward motion as the chords become thicker (more notes) as they move down	piano and vibraphone, dovetailed by soft tremolo roll suspended cymbal
B	2	431-454	2/4	♩ = 72		fragments of granular music and stabbing punctuation music return in the piano and vibe with each repeated texture followed by long-held notes as in an echo; slow progression of movement alternating with stillness; occasional burst of upward marcato notes in the piano shift the harmonic series from WT2 to WT1; string harmonic glissandi to bring the section to a temporary closure	piano, vibraphone, winds and brass
B	3	455-472				clear, delineated entry of stabbing punctuation music and granular texture in the woodwinds provide a brief repose; fast downward scale alternating with long-held tremolos in the strings, again, create juxtaposition of stillness vs. movement	solo vibe, solo piano, granular woodwinds, repeated B natural in harp
A, B	4	473-507	3/4, (6/8)	♩ = 60- 66		granular layer in the vibe/piano is superimposed with echo/sustaining layer in the brass choir and string tremolo doubling at unison in staggered entrances while each entry diminuendo; each entry provides a punctuation, creating a rhythmic counterpoint to the consistent rhythm of granular texture; starting from m.490, woodwinds, percussion enter as added layers in what eventually becomes the climax of the piece; largest sound spectrum (in tessitura) collapses to D# in the middle register at m.505	entire orchestra
A, B	5	508-531	3/4, (6/8)	♩ = 60- 66	similar harmonic structure in mm.288-296 and mm.521- 524	second climax after a brief repose; the previous shapes reappear metamorphosed; the texture is much more dense and thick; the attack vs. reaction relationship alternates more frequently towards the end of the section	entire orchestra

Part III
Section 7: Closure
Transition-Recap-Brief Tension-Relaxed and Distilled Summary

Materials	Phrase	Measure	Meter	Tempo	Pitch/ Register	Gesture	Notable Instrumentation
I	1	532-540	4/4, (2/2)	$\text{♩} = 80$		transition from climax to recapitulation; a brand new timbre is heard as the entire orchestra excepting the brass play in the pointillistic texture; light attacks produced col leg. batt, harp, softer dynamics create a distant relation to the granular music, but in a form of distilled memory	entire orchestra
A, B, G, E	2	541-554	3/4, 3/16	$\text{♩} = 88-92$		recap; the beginning of the entire piece returns in a more relaxed manner; unlike the beginning where both soloists play, recap starts with only the piano part against the held chord in the woodwinds; making the texture more transparent; after a 1-bar of fast upward gesture, solo percussionist joins in a slower rhythmic layer; another 1-bar interjection of an upward burst	solo piano with held notes in woodwinds; later expands to the entire orchestra
E, A, B, F, H		555-576	3/4, 3/16			accompanying layers expand from woodwinds to strings, brass choir, Javanese gong; vlin and viola tremolo glissandi material join at midpoint; with cencerro's rising scale, the range widens before it become focused again toward the middle register	entire orchestra
F, E, B, I	3	577-605	3/4	$\text{♩} = 84-88$	12 notes introduced one by one	Coda: slow string glissandi, or moving notes, express the 'reaction' the moving notes while the sustained notes express the initial 'attack'; brief interjection of criss-cross gesture with tremolo ending	strings and woodwinds, bell-family in the percussion, harp; with a brief eruption entire orchestra
D, F		606-610 (end)	6/4	$\text{♩} = 84-88$		stop and flow; piano and percussion try to catch (stop) with sudden chords the flowing string glissandi that disappear into the softest dynamic	glissandi strings, vibe and piano punctuations

APPENDIX III

COMPOSER'S SKETCHES

Doppelkonzert für solo Klavier u. Schlagzeug u. Ensemble
3. Juli 2002.

Besetzung: solo Schlagzeug (mit Instrumenten mit bestimmten Zombike) ^{mit Schrauben mit Dibel} Fl. Ob. Klar (Cibere) Trg. (K. Tr.)
* Harmonik: liegt auf die ^{Piano (präparierte.)} Klarm. 1 Tenor Posanne 1 Bassposanne (?)
wandert ständig (im Graz) (mit Instrumenten mit unbestimmten Zombike)
stufe gestellt. (2 Violine 2 Bratsche 2 Cello, Kontrabass.)

2 Celli: $3 \cdot 3 \cdot 2$
 $1 \cdot 1 = 3 \cdot 2 \cdot 3 \cdot 2 / 5 \cdot 3 \cdot 2$
je unter Legieren.

blockartig. von Abschnitt in Abschnitt. Abschnitte
gibt bereit in metallisch, Holz, Geräusche.
so Klavier als ein Instrumentarium behandeln.
nach Register, wie Metall, Holz, und Sch
Dibel. Exotische Klangfarbe und Melodien. (quasi Metall)

Zweiter Abschnitt
auf gest

Chorus mit Microstruktur
* Anfangsabschnitt: mit sehr viel geräuschhafter Zeichen von Klavier und
Schlagzeug. Kaoische Stimmung. Holzbläser mit Luftgeräusch
mit Kloppergeräusch + Straicher Pizzicato und collegno Silenz.
Harmonie auf C - Bur Atkord - legend. (+ h). Manifester der sich allmählich
in entwickelt. Manve werden herauskristallisiert.

* Harmonik: liegt auf die kleine Septime an. Harmonische Zentrum wandert ständig (im Grunde in Dreiklang). $\#11/12 \rightarrow 11/12$ in 6. Septime Stufe gereicht.

* Unbegleitete werden präpariert

* Die Grundidee ist eine Musik, die ähnlich ohne melodische Gestaltung nur mit Rhythmus, die in mehrere verschiedene Aspekte erschaffen werden. Rhythmus, die anhaltend bleiben ohne Veränderung. Rhythmus, die plötzlich klein, groß, schnell und langsam werden. Rhythmus, die abrupt von einer Form in die andere verwandeln.

Textur ist äußerst komplex & ausdrucksvoll, keine statische Textur. Von allen Instrumenten möglichst alle möglichen Geräusche herausbringen.

+ Das Klavier fungiert als ein erweitertes Schlaginstrument

+ Rhythmische Gestaltung: $3+2/3+2/2/7+5/7+5/6+6$

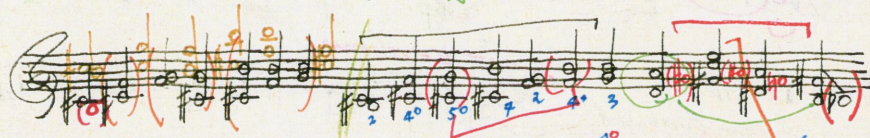
Die Zahlen 3 3/5/6/7 entwickeln später in

Handwritten musical score for piano, featuring multiple staves with complex rhythmic notation and colorful annotations. The score includes various musical symbols, including notes, rests, and dynamic markings. The annotations are written in red, green, blue, and orange ink. The score is divided into sections by staves, with some sections marked with '3', '5', '6', and '7'. The overall style is that of a handwritten manuscript, with a focus on rhythmic complexity and expressive notation.

Etüde Nr. 5 10. Jan. 2001

Violinkonzert 9. Juli 2001

Instrumentation: Fl. 2 (Picc. Alt), 2 Ob. (E.H.) 2 Kf. (sopran Klarinette
Fag. Kontrabass, 4 Hr. 4 Trp. 3 Posone Tuba. 5-6-er Baß Klarinette?)
2 Hf. 2 Mandoline. Celesta. Suborgel. 2 Glockenspieler
2 Trompeten und Vibraphon jeweils links und rechts 2 Marimbaphone? 2 xylophone
I. Eine für in Ziffern. Thema Gewebe. Anfang verschiedene kleine Figuren,
die durch Solo Violin aufgeführt werden. Die Figuren reagieren sich aufeinander
agieren, und übernehmen eine ungeordnete Laufbahn in einer Gesamtgewebe.
Harmonische Schemata (!) Ungewöhnliche Klangfarben. Chordale Distributionskonstruktion.
Figurenstruktur und Entwicklung nicht linear. Man hat das Gefühl



*Rhythmus: gereite (u 5) in nicht angebotener Form. Jedes Instrumentengruppe
hat seine eigene Rhythmusstopp.

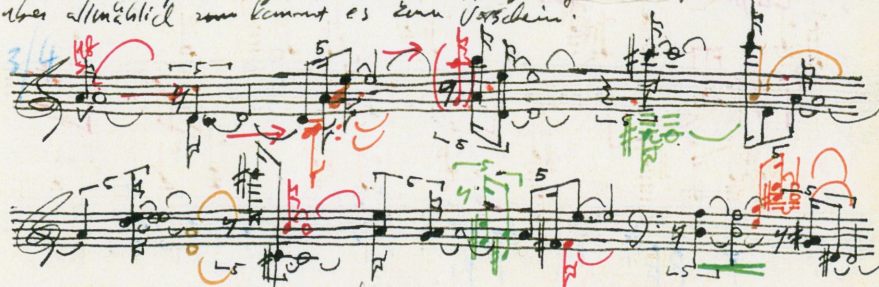





* Anfang, die Linien ziehen und punktuell gestalten. Rhythmus als Grundriss andeutend erschreiben lassen. Rhythmusbeispiel besteht aus 2 verschiedenen Rhythmusarten: in 5/4 vers. 16. Harmonische Struktur basiert auf die 4 Leersaiten. Anfang des Stückes werden 4 Leere Saiten mit Hilfe von anderen Instrumenten dargestellt.



* Stimmführung mit GDAE. ~~1. 2. 3. 4.~~ als Klangpalette. ~~später~~ später Bafflöten. Anwendung der 4 Leersaiten nicht mechanisch aufeinander aufbauen. Alle Töne auf A bezogen, und treten in verschiedenen Oktaven auf. Gehe die Töne jeweils prägnant auf A D E h/c/s h/s/g/s in Nominalintervallen verwenden. Rhythmus gerät in 5 am Anfang wegen der hohen Noten annehmlich über allmählich zum Kommt es zum Verschwinden.



* Takt $\frac{3}{4} + \frac{5}{16}$ (0.5)  ~~mit den~~ mit den kleinen rhythmischen Partikeln werden zum ganzen Klanggefüge untergeordnet. Harmonie auf Septime basiert. Textur wird dichter und intensiver (coll. Violina sehr virtuos wie eine Nadel die feinen Fäden von verschiedenen zusammenbindend). -> der Klang verändert sich in Nebel. Eine Art von Schweben von den vorherigen Figuren. Schluß basiert auf die herabfallenden Töne (alle 12 Töne gehen auf die 7 Töne von den 4 Leersaiten und deren Transpositionen).



* Die gleiche Figuren abwechselnd mit verschiedenen Instrumenten verwenden. Ablauf nicht linear. Immer wieder überraschende Wendungen.

* Die Klarinette & Leiersaiten für den 2. Satz. Fragmente mit abwechselndem Klangfarbe
 Der erste Satz: Rhythmus ist wesentlich beweglicher. Fragmente am Anfang nur als Punkt
 dargestellt. Am Ende des Satzes kommen die Linien hervor. Hintergrund Intervallfolge,
 die sich im Kreis drehen. (HP + Holzbläser).

Harmonik
 Kontrabass

Das ist eine unisone geführt. Kann hörbar. Eine imaginäre Kapellmeister für die sol. Violine.
 Soloviolone mit Intervall im Quinte und übermäßige Quinte (D/A) als Zentrum im
 Kreis drehend dargestellt. Später macht sich die Kapellmeister selbstständig und
 kommt Holzbläser polyrythmisch dazu.

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